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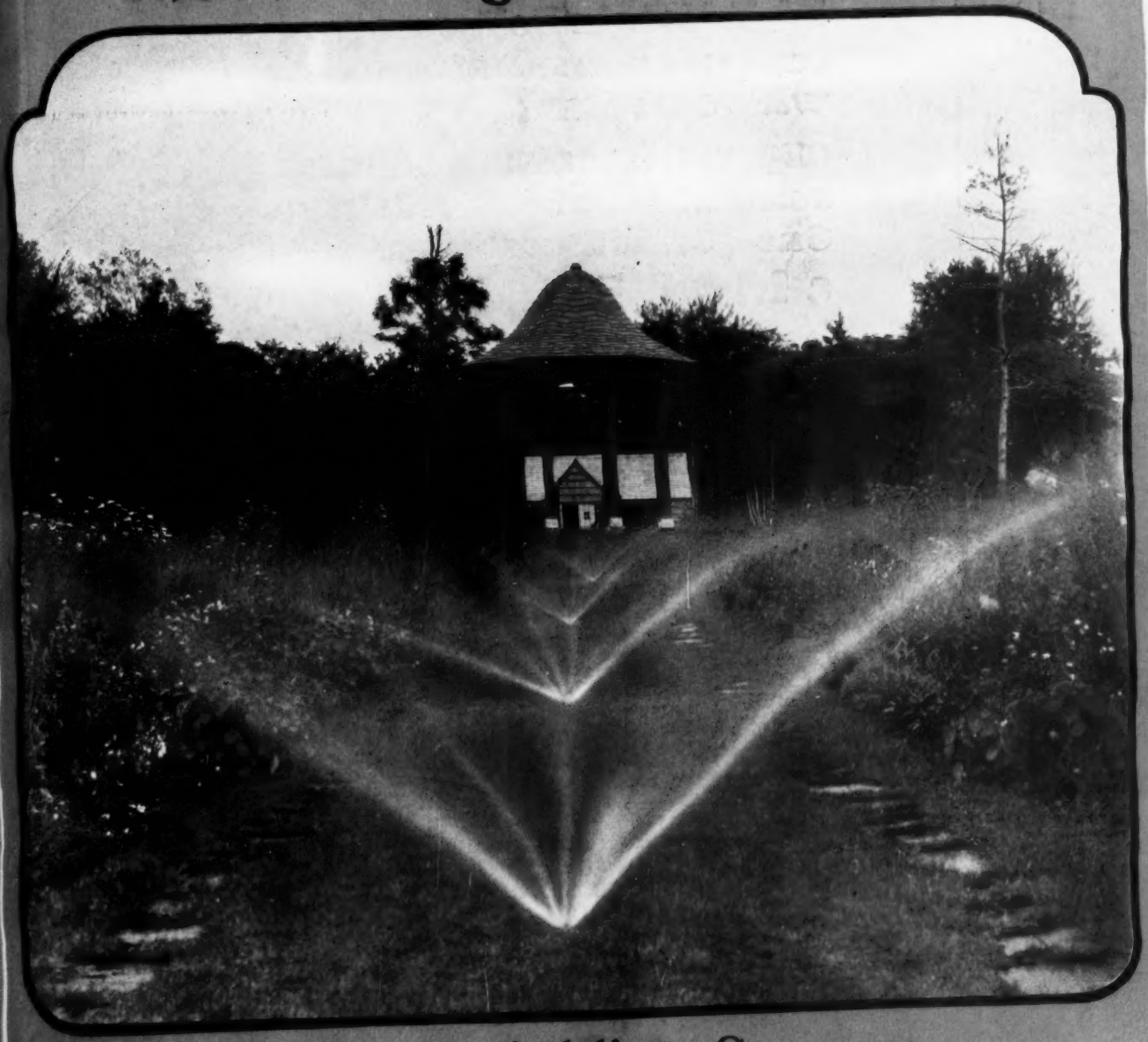
DOMESTIC ENGINEERING

The Plumbing and Heating Weekly



Lawn Sprinkling Systems

JULY 23, 1927

A high position

The high position which the Weil-McLain Boiler now occupies is due not alone to its wide acceptance by heating experts, but also to unusual results in the hands of users. One pleased customer tells a friend. Each added user becomes another booster. A substantial boiler business is certain to result.

Weil-McLain Company

Manufacturing Division
Michigan City, Indiana

Jobbing Division
Chicago, Illinois

Line up with

Weil-McLain

SCIENTIFIC COMBUSTION

BOILERS

"SEE THE WEIL-McLAIN BOILER JOBBER IN YOUR TERRITORY"

332

Prosperity!

Prosperity is a great teacher; adversity a greater. *Hazlitt.*

Of course, prosperity is the more desirable teacher—the one that you want to take instructions from and you'll get into his class when you start to sell **VOGEL** Frost Proof Hydrants and Closets.

VOGEL products are year 'round sellers and year 'round necessities for all farm homes, gas stations and, in fact, any building where sanitation is a requirement every day.

Write for **VOGEL** information today. You can enjoy prosperity all the time with the **VOGEL** line behind you.

Our Catalog in

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JOS. A. VOGEL CO.

Wilmington, Del. **St. Louis, Mo.**

VOGEL PATENTED

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Chicago, July 23, 1927

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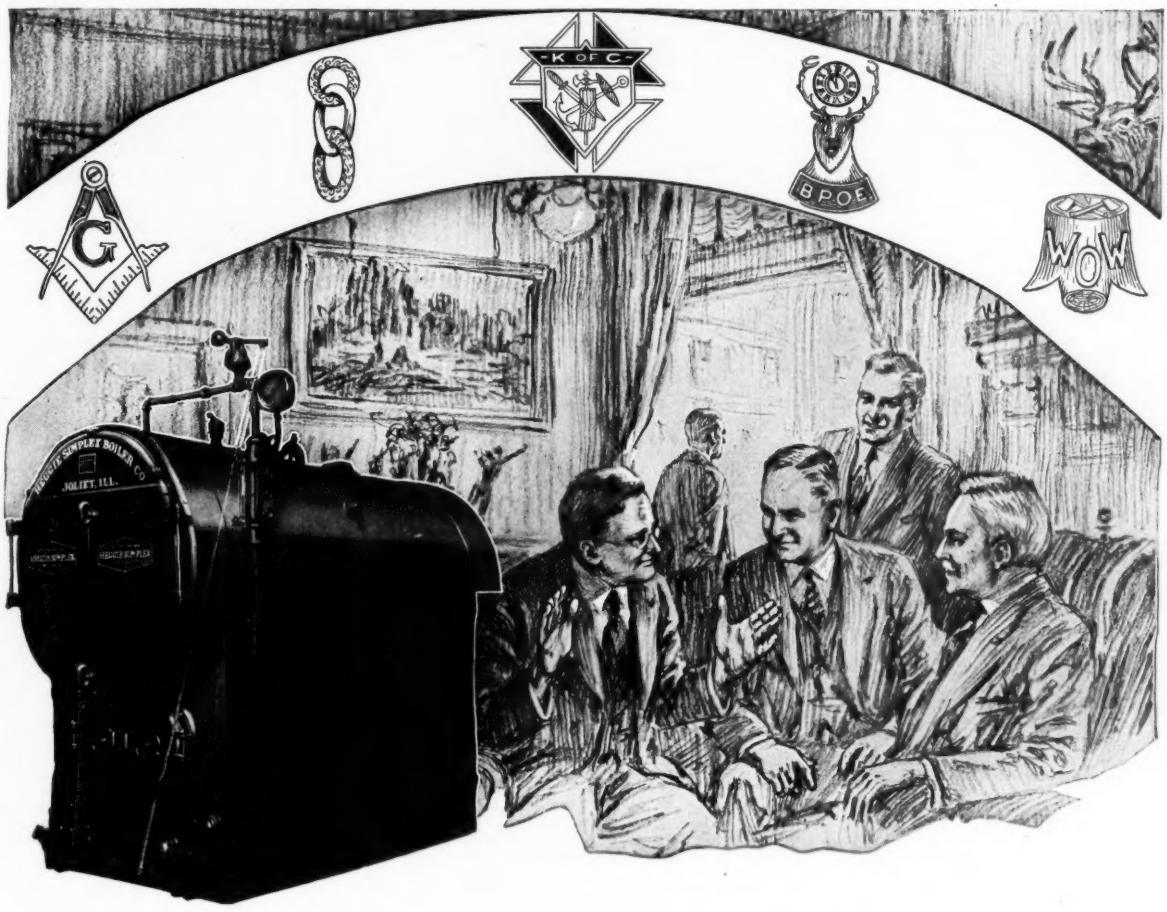


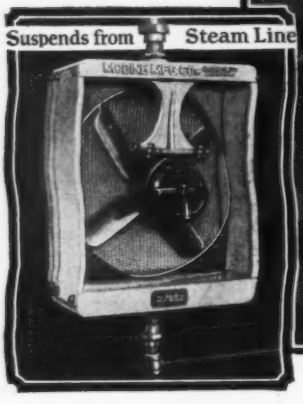
—And in our Leading Lodges—

IN the Club quarters of America's most representative fraternal organizations—built, managed and occupied by keen and experienced business men—where satisfactory heating service at lowest final cost is insisted upon—Heggie-Simplex boilers are found in rapidly increasing numbers. *Recognition that modern* conditions demand modern heating equipment and that only the best is good enough.

Heggie-Simplex Boiler Co., Joliet, Illinois. Representatives in principal cities —telephone and address listed under "Heggie-Simplex Boiler Company."

HEGGIE-SIMPLEX
ELECTRIC-WELDED STEEL HEATING BOILERS

There's nothing else like it!



Two Men Can Install It in 30 Minutes

Outlasts Cast Iron

"Directed" Heat

THE Thermodine Unit Heater is different from any other—the lightest, the Unit Heater with the greatest *prime heating surface for its size and weight. A 125 pound* Thermodine Unit supplies the heat of 4900 pounds of direct radiation. Two men can install the Thermodine in 30 minutes, after piping has been completed.

Made from non-corroding metal, tested to 200 pounds *hydrostatic and 100 pounds steam pressure, the* Thermodine condenser is built for years of service. It cannot leak. Will not rust. Is freeze-proof.

The Thermodine Unit Heater suspends from the steam line, up out of the way. Conserves floor space. May be installed to supply heat any direction horizontally. Adjustable deflectors provide *control for vertical direction of heated air.*

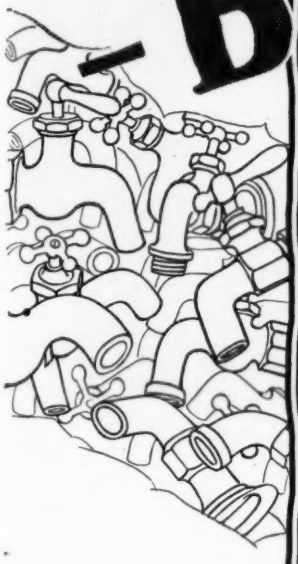
The advanced Thermodine Unit Heater actually costs less than old type equipment. Send for complete facts now. The Thermodine also is widely used in drying processes. Special information sent on request.

MODINE MANUFACTURING CO., (*Heating Division*) Racine, Wis.
Branch Offices in all Large Cities

THERMODINE
UNIT HEATER
FOR STEAM OR HOT WATER HEATING SYSTEMS

ThermModine

Brass -Brass -BRASS!



THE plumbing store that merely *"carries a line of brass"*—no matter whether it is cheap brass or good brass—is "out of luck" when it competes with a store selling the carefully engineered, highly specialized line of Chicago Faucets.

There is little you can say about the ordinary line of brass goods. There is very little difference between one line and another. What you say about one, you can say about all.

Chicago Faucets, on the other hand, are full of interesting talking points, distinctive features that set them apart from any other faucets on the market.

A faucet with a standardized, renewable working unit that can be changed as quickly and easily as an electric bulb the instant a leak occurs is a faucet that every building manager, every home owner wants to have as soon as it is explained to him. And after a little experience with Chicago Faucets he will never again be satisfied with less.

We have just published a little booklet containing 40 pages of actual evidence obtained from big building managers describing personal experiences with Chicago Faucets—and others.

May we send you a copy? Write for it today.

THE CHICAGO FAUCET COMPANY
2700-22 N. Crawford Ave. Chicago
Telephone Belmont 0301

Standardized Renewable Working Unit

Can be changed as easily as an electric bulb. One unit fits all faucets. *Seat* replaceable like washer. No wear on main body casting—the reason why Chicago Faucets *outlast the building.*

CHICAGO FAUCETS

It Brightens Blue Mondays

The Porceliron Laundry Tray

A DURABLE—and, hence, thoroughly practical Porcelain Enamel Laundry Tray: Attractive enough for the most pretentious home and yet so inexpensive that it is within the reach of every income.

The standard unit (illustrated above) consists of two compartments, each deep drawn out of heavy guage enameling iron and finished, inside and out, with PORCELIRON—"The Perfect Porcelain Enamel."

There are no inside seams, joints or crevices. The glistening white surface of PORCELIRON is very durable. It is hard and tough. It will not peel, craze nor scale, and with ordinary care it will last a lifetime.

Designed for use either with or without a washing machine, the Porceliron Laundry Tray can be set against the wall or out from it giving access to all four sides.

Base and legs which are adjustable for height are furnished as part of the unit at no extra cost.

In short, this new unit of home equipment is planned to meet modern standards of living. It is worth knowing about. Write for literature.

This booklet describes the Porceliron Laundry Tray in detail and contains a sample of the material of which it is made. It's mighty interesting—free—and we want you to have it.

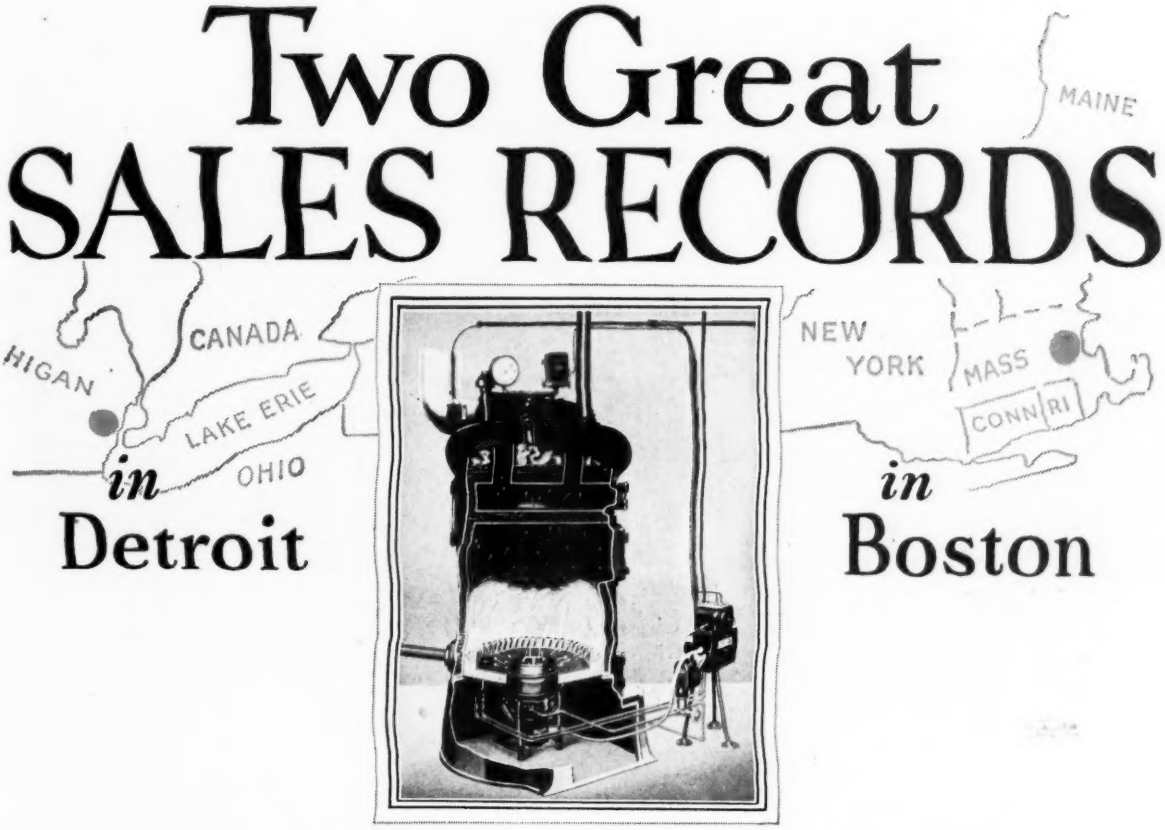
PORCELIRON

Ingram-Richardson Manufacturing Company

Dept. LT. 15, BEAVER FALLS, PA.

Porceliron Factories at
FRANKFORT, IND. BEAVER FALLS, PA. BAYONNE, N. J.

Two Great SALES RECORDS



in Detroit

in Boston

Real Sales Volume for Dealers

Nowhere in the history of the oil burner industry can records be found equalling those established in Detroit and Boston by Silent Automatic.

In Detroit absolute dominance of the oil burner market has been established in just two years. A recent check shows Silent Automatic *to be outselling all other burners combined* by nearly three to one. This is taken from official installation permits.

In Boston nearly 900 Silent Automatics were sold the first year—an outstanding achievement. But — even more remarkable — in *two recent weeks* 218 Silent Automatic Burners were sold—a dollars-and-cents volume of *$90,000 — indicating that the first* year was just a start.

The advantages, methods and experience that made possible these remarkable accomplishments are at the disposal of new Silent Automatic dealers. Correspondence is invited. Get the details of our liberal advertising and sales cooperation—of the remarkable Silent Automatic Burner itself—and you will see sales and profit possibilities far beyond anything the industry has previously offered.

$395

Complete with automatic safety and operating controls. *Nominal installation* costs depend on basement conditions, oil storage equipment and local ordinances.

Made in Detroit

Listed as standard by Underwriters' Laboratories

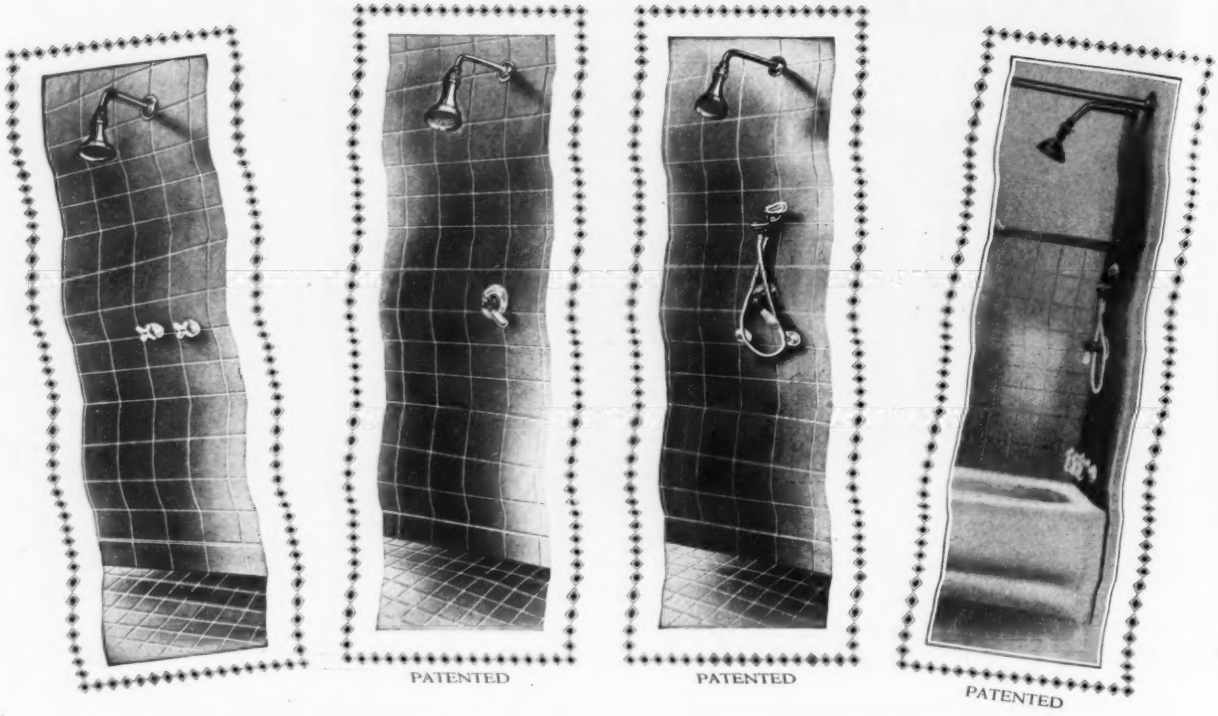
SILENT AUTOMATIC CORPORATION, 255 MELDRUM AVENUE, DETROIT

SILENT AUTOMATIC

THE NOISELESS OIL BURNER

(224)

PECK BROS.
SHOWERS



A SHOWER BATH is the most stimulating form of bathing. Our line of showers is unlimited. We make all the regulation showers, also special showers to suit conditions, concealed or exposed, in nickel plated brass, PECK'S NICKEL COMPOSITION (a solid metal) and Peck's CRODON finish.

The high grade material, workmanship and durability of Peck's showers quickly settles the problem when a selection has to be made.

Send for Illustrated Booklet on Peck's CRODON Finish.

All Peck fixtures can be furnished
in Peck's Crodon finish if desired.

Established 1856

THE PECK BROS. & COMPANY

NEW HAVEN, CONN. NEW YORK CITY.

Hot Water Damper Regulators

The Diaphragm That Guarantees Continuous Operation Without Servicing

When you install a hot water house heating system, bear in mind these two points—

1. There's an extra profit for you in selling Sylphon Damper Regulators to insure efficient, satisfactory operation.
2. The Sylphon Bellows—diaphragm of all Sylphon Regulators, assures life-long control—without servicing costs of any kind.

Sensitive, Smooth, Positive in Action and Durable

The genuine, all metal Sylphon Bellows, contained only in Sylphon Regulators, is the most sensitive, flexible and durable diaphragm known to engineering science.

Be sure you install the Regulator with the Fulton Sylphon Bellows—and you can be sure of continuous automatic control with no unprofitable call backs for servicing.

Ask for Bulletin KDR-5 Giving Construction Details.

Cut-open view of No. 45-A Sylphon Hot Water Damper Regulator. Controls from 120 to 220 degrees F. Length of bulb 2 inches; threaded 2-inch pipe size. Installed in a Y or screwed into boiler.

No. 46 Sylphon Hot Water Damper Regulator. Controls from 130 to 200 degrees F. Length of bulb 1 inch; threaded 1-inch pipe size. May be screwed into small boilers with light dampers, laundry or garage heater.

The Fulton Sylphon Company

Originators and Patentees of the Sylphon Bellows

Knoxville, Tennessee, U.S.A.

SALES OFFICES IN: New York Chicago Detroit Boston Philadelphia and all the Principal Cities in the U. S.

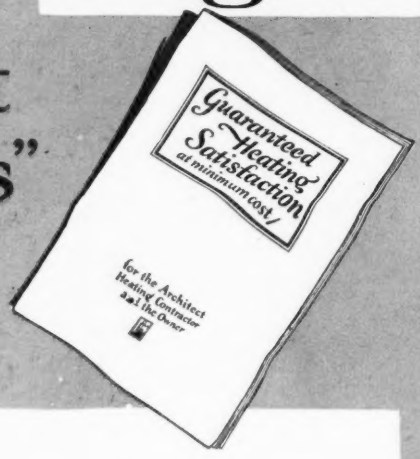
European Representatives: Crosby Valve & Engineering Co., Ltd., 41-42 Foley Street, London, W. 1, England

Canadian Representatives: Darling Bros., Ltd., 120 Prince Street Montreal, Canada

Bringing *to* Light

"The truth about Boiler Ratings"

A direct effort to help architects and heating contractors overcome the competition of the over-rated boiler



This letter shows the savings made by a fairly rated boiler having adequate fire surface.

" " "

"I HAVE two pieces of property in Roxbury, Mass., which are identical as to size both in the number of apartments and with the exact amount of radiation. In each case new flues 12 x 16 inches in diameter.

"In one building I put in four years ago a Boiler other than your make to heat these apartments. Year before last I heated the other building with one of your nine section No. 36 Smith Boilers, which was of the same capacity as the other boiler. After a while my janitor reported that the Smith Boiler was burning much less coal than the other boiler. I made a test on this and found his statement to be correct. I immediately gave orders to have the other Boiler taken out and to have another one of your nine section No. 36 Smith Boilers installed. This was done and immediately cut down my coal consumption.

"My old boiler burnt ninety tons of hard coal at $15.50 per ton, and the Smith Boiler burnt sixty tons of soft coal at $8.00 per ton. A saving of $910.00 per season on each boiler."

WHEN—

The public knows that Plenty of Fire Surface Fairly Rated is the one answer to true heating economy—

THEN—

the competition of the over-rated boiler will automatically pass out of existence.

BUT—

until such a time has arrived the job of acquainting prospects with these facts falls to the architect and the heating contractor.

To help architects and heating contractors acquaint their clients with the economic necessity for a Fairly Rated Boiler (and thus help them to overcome the competition of the over-rated boiler) we have issued a 32-page booklet, "The Truth about Boiler Ratings." It contains a simple common-sense explanation of this phase of heating. The coupon will bring you a copy by return mail with our compliments. The H. B. Smith Company, Dept. A-36, Westfield, Mass.

THE H·B·SMITH
BOILERS & RADIATORS
Used in fine homes and buildings since 1860

The H. B. Smith Boilers for steam, hot water and vapor heating; radiators; and hot water supply boilers; for every type and size of private home, office building, factory and public building

The H. B. Smith Co., Dept. A-36, Westfield, Mass.
Gentlemen: ☐ Send a copy of your new booklet on Boiler Ratings. ☐ Also send me a copy of your booklet, "Does it Pay to Install an Oil Burner?"

Name.....

Street.....

City.....*State*.....

A Letter from Harry G. Nye

July 23, 1927

To THE PLUMBERS AND STEAMFITTERS
OF THE U. S. A.

Friends:

I just got through washing the dog, or the dog me, it's hard to tell which. There is only one thing in the world wetter than a wet dog, I guess, and that is the man who got him wet. Whenever I have to sprinkle the lawn, I just wash the dog, and turn him loose. But, by the time he gets through with me, he has mighty little water left for the grass.

Of course, I put a little kerosene in the water, which is the wrong thing to do, and the only sure thing; and then the dog did a loop-the-loop out of the tub, did one shimmy, and now I dassent light a cigar. I am one fire risk that no good insurance company would accept. If you hear that anything has happened to me, you will know that I wound up like a Fourth of July celebration with a grand display of fireworks in the evening.

The moral of all of which is what? Just this: You can't wash a dog and not get wet. You can't put kerosene on a pup and not get a little on yourself. You can't throw mud and not get your hands dirty. If you knock another man, your neighbors will begin to wonder about you, too. You can't hurt anybody in the world much, without hurting yourself a little.

Now and then some competitor of mine says something about me, but it doesn't bother me any. He's just washing the dog. In the minds of the trade, he is the one who will look all wet. But don't blame the poor fellow too much. I don't see how they sell as many dies as they do, when a plumber can pay a little more and get a die that is such a whole lot better.

Because don't forget this: The extra ease of operation, the greater speed with which it cuts, and the longer life that a Nye die has, cost only a few cents, and are the cheapest thing a plumber can buy. You pay the same price for what the other die does, and then pay a few cents for what no other die does at any price.

Yours for doggone good dies,

Harry G. Nye

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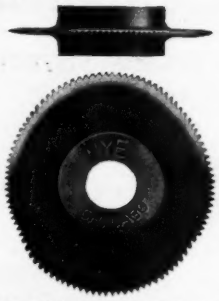
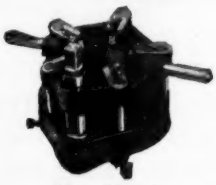
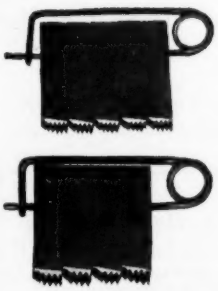


Nye thin blade cutter wheel, made to fit all standard makes of pipe cutters, and guaranteed against breakage in use. Made both in smooth and knurled edge.



Nye No. 2
GEARED THREADING DEVICE
Improved
Capacity 2½ in. to 4 in., inclusive.
Net price complete..... $50.00
West of Rocky Mountains..... 55.00
FREE TRIAL—ABSOLUTELY GUARANTEED

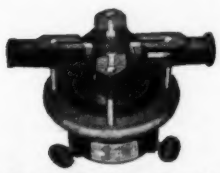
Nye Solid Dies
The Nye patented feature of removing every alternate tooth in the back of the die to reduce friction is used in Nye Solid Dies. These dies are hardened and tempered in oil and made of finest tool steel.



Nye Chasers
Fit Nos. 1, 1-A and 2 Receding Die Stocks.
No. 1, 1 in. to 1¼ in....$ .75 per set net
No. 1, 2 in..... 1.25 per set net
No. 2, 2½ in. to 4 in..... 3.60 per set net

Nye Closet Spud Wrench
Net Price..... .....$0.50

OTHERWISE KNOWN AS
THE NYE TOOL & MACHINE WORKS
MANUFACTURERS OF HIGH GRADE PIPE TOOLS
4120-30 Fullerton Avenue Chicago, Illinois



No. 1 Nye Receding Pipe Threader.
Complete.....$9.60 net
West of Rocky Mountains.....$10.80

Nye Barnes Pipe Cutters

No. 1	$ 2.25 net
No. 2	3.00 net
No. 3	5.00 net
No. 4	10.00 net
No. 5	15.00 net
No. 6	20.00 net

Heating Specialties Dept.

It pays to push the line that is constantly advancing

Concentrate your efforts on Trane equipment. Within the past few years the Trane Company, one of America's established manufacturers in the heating field, has come forward with one improvement after another. The Trane bellows trap—Heat Cabinets and Concealed Heaters — Unit Heaters—new model pumps —always something to arouse the interest of the heating world.

That means something to you. It tells you that the Trane organization is talked about—regarded as up-and-coming—looked to as the source of more new developments in its specialized field.

Take advantage of this reputation for progress. Your trade will respect you for recommending Trane products.

You can make bigger profits by selling Trane Traps and Valves

Modernize Old Heating Plants with Trane Heat Cabinets

—and make more money this summer

CHECK up on remodeling jobs in your vicinity. That's your chance to install Trane Heat Cabinets! No new piping necessary. Take any system built for radiators—pull off all the radiators and connect the Heat Cabinets—and the job is done. Installation is easy—total weight $\frac{1}{5}$ that of equivalent cast iron radiation.

The way to sell Heat Cabinets is to go out after the first few jobs—then let the enthusiasm of your customers do the rest. They'll be so pleased with the beautiful finishes you can suggest and the greater comfort you can provide, that they'll tell everybody they know. Not just another scheme to disguise a radiator—but an entirely new heating unit. Thousands in use—every one a selling argument for the man who did the job. Get started now on this profitable business. Write for free booklet.

THE TRANE CO., 204 Cameron Ave., La Crosse, Wis.

Important Improvements in Trane Heat Cabinets

- Rust-proof galvanized iron frame on heater.
- Heating Element stiffened and reinforced—side plates channel formed.
- Heavier end plates on visible type.
- Larger and heavier legs.
- Heaters fitted for same end or opposite end connections.
- New style damper grille on Concealed Heaters.
- Stronger construction for Heat Cabinets.

HEAT CABINETS **TRANE** CONCEALED HEATERS

··· *PUMPS AND HEATING SPECIALTIES* ···

Between Ourselves

The man who is so busy that he does not have time to read his trade paper is like the man who was so busy chopping wood that he did not have time to sharpen his axe

WHEN A PERSON IS PLANNING TO build a home in these days the tendency is toward building things into the house. We have built-in automatic electric refrigerators, built-in vacuum cleaners, built-in medicine cabinets, wardrobes, kitchen cabinets, bathtubs, laundry chutes and any number of other comforts and conveniences. In recent years another built-in system has become popular—that of built-in lawn sprinkling systems. It is a very simple matter comparatively, to pipe the yard of a new home for such a system, and the time and trouble saved, not to mention the increased beauty of the lawn, are well worth the added expense over the old system. This lawn sprinkling system business is one in which many master plumbers are overlooking a good bet. Some such installations are being made by handy-men and gardeners, while it is really a part of the master plumber's job. The next time you bid on a residence job, speak to the owner about such a system. He may never have heard of them, or may have an exaggerated idea as to the expense of such a convenience. This week we are publishing an article called "Lawn Sprinkling Systems," which will give you a lot of good information on this work. Read it and get the extra profits such an installation holds out for you. Many master plumbers have already found this source of profit.

DURING THESE HOT spells, the only kind of stirring we have much enthusiasm for is the stirring of cold drinks on the front porch, but a master plumber out in Bakersfield, Calif., believes in making a stir in quite another way. He believes in doing things in a way which makes people sit up and take notice, and stirring up enthusiasm among the citizens of his city for new and better plumbing and heating work. Milt Marvels writes a story about R. I. Walters, proprietor of the Bakersfield Plumbing Co., and tells how his attractive window display and showroom make a stir in his city. Mr. Walters' shop is an excellent example of merchandising through attractive display, and a number of merchandising pointers can be picked up by reading the story. It is called, "Make A Stir."

Do You Know—

1.—What state association president died recently while in office?

2.—What relic of the Victorian Age in England has recently been brought to this country?

3.—What question is now under discussion concerning the manufacture of range boilers?

4.—What was the first state auxiliary to affiliate with the National auxiliary?

5.—How many enameled iron lavatories were sold in the U. S. in 1926?

6.—How did the word "plumber" get into the English language?

Answers will be found on page 82.

IF YOU HAVE BEEN FOLLOWING THE series called "Solving Chinese Puzzles" you will know how interesting the various jobs were. The stories are written by an American engineer who for many years was in charge of a large plumbing and heating contracting company in China. His experiences, besides being of interest from the standpoint of being unusual, show the crudity of plumbing and heating in a country which is said to have had at one time the most highly advanced civilization in the world. Plumbing is one of the vanguards of civilization and perhaps modern work will help this country to regain its civilization. The third of this series is being published this week.

THE SCHOOLMASTER DISCUSSES the plumbing problem which appeared in a recent issue, and makes comments on the solutions in this week's issue. He also shows what a good work "Your Weekly" has been doing in an educational way in the past years. This work is being continued nearly every week in the year, and the more of our subscribers who send in answers to these problems, the more valuable they will become to those who do, as the more opinions we get, the more ground we can cover. A heating problem is also being published in this issue.

IT HAS BEEN A LONG TIME since we have given ourselves any mention on this page, but a letter received recently from J. F. Leisenberg of Blackwood, N. J., is hard to resist a comment upon. He writes, "I am very sorry I have to announce that for the second time the best plumbing and heating paper in the world failed to reach me. I would like the back issues. I look forward to it each week, and it sure is a disappointment when one week goes by without it." Mr. Leisenberg is not the only one who feels that he suffers when an error is made in the mailing department. Other letters of commendation come in nearly every mail.

Your Editor

AT LAST!

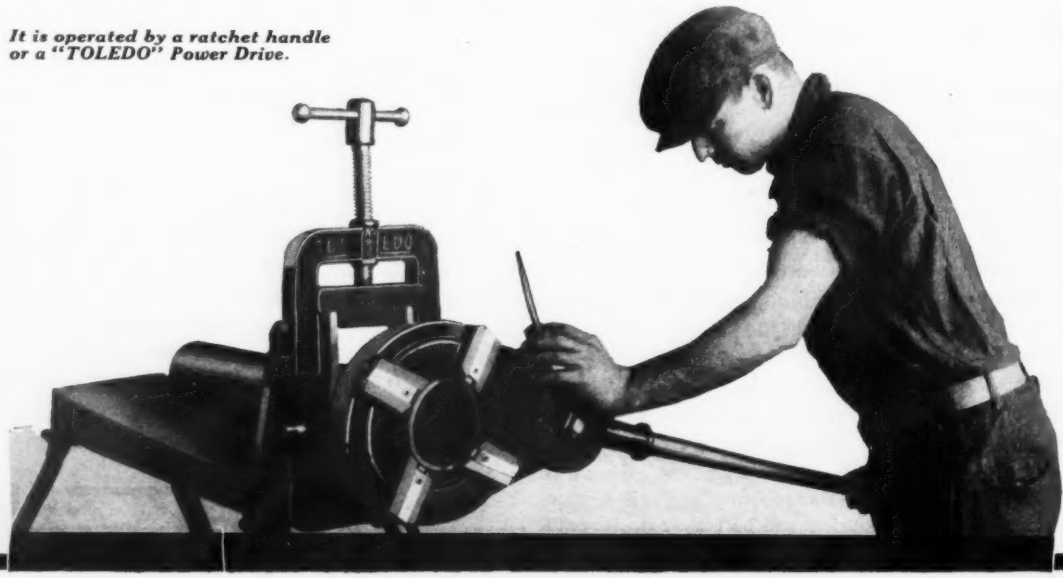
THE PERFECT PIPE CUTTER, AND
OF COURSE IT'S A "TOLEDO"

Here at last is the perfect 2-in. to 4-in. pipe cutter that eliminates all pipe cutting problems. Cuts rapidly with a straight, square-end cut without burr. Compact, easy to handle, and weighs but 65 lbs. Knives fed automatically. Very simple to operate. Net price $60.00 f.o.b. Toledo.

It's the pipe cutter you need for your work. Drop us a postcard for complete details.

THE TOLEDO PIPE THREADING MACHINE CO.
TOLEDO, OHIO *NEW YORK OFFICE, 72 LAFAYETTE ST.*

It is operated by a ratchet handle or a "TOLEDO" Power Drive.



DOMESTIC ENGINEERING

Vol. 120, No. 4 Whole No. 1806 — The Plumbing and Heating Weekly — Chicago, Illinois, July 23, 1927

Sell What They Buy

We note from a recent survey made by the United States Chamber of Commerce in a large eastern city that no less than forty widely different kinds of commodities are sold in what are still called hardware stores. In other words, the hardware store apparently is no longer distinguished by the fact that it is a place where hardware is sold. Among the miscellaneous stocks found in such stores in this city were furniture, gasoline, groceries, radio sets, magazines, toys, fertilizer and leather goods.

The same census revealed also that jewelry was sold in drug stores, women's hosiery in candy stores, hats and caps in shoe stores and tobacco in bakeries. Apparently, the old type of store which sold a single class of commodity is disappearing. The new type of retailer sells whatever his customer will buy.

What does this mean to the master plumber and heating contractor? It should mean, perhaps, that he would do well to study this manner of retail merchandising and endeavor to utilize that phase of it which gives one very definite advantage to such retailers. That is the advantage of attracting people into the store. Aside from the possible profit in its sale, one of the reasons the drug store sells jewelry is that if it can get people into its store to buy jewelry it has a better chance to get those people's razor blade and sundry drug business. In other words, it establishes itself as a source of supply for jewelry because that widens its appeal to the purchasing public. Similarly, one of the reasons a hardware store sells leather goods is that leather goods bring people into the store who would not come in, perhaps, to buy hardware. But, when they are in, they might easily be persuaded to buy the hammer which they have been needing for some time.

Now, we do not recommend that the master plumber install a soda fountain to get people into his store. At that, we once visited a plumber in a small town and found him doing a rushing ice cream business in the front of his shop. We just urge the master plumber to recognize the business value in attracting people to his store and to do more than he is now doing to attract them. A prominent manufacturer in the plumbing industry has long advocated that the master plumber put in a counter of cosmetics. His idea is that cosmetics will bring in the women and, once in, they will often become, or can be made to become, interested in new, modern plumbing equipment. Cosmetics might sound far-fetched. It is not our intention to recommend them, either. But are they more far-fetched than jewelry in a drug store? We quote again, "the new type of retailer sells whatever his customer will buy."

The plumber must widen his appeal to the purchasing public. In order to sell more plumbing than that which comes his way he must get people to look over his line. If jewelry does it for the drug store man, the wide-awake merchant plumber can find something to do it for him.

Building Breaks Records

When we look over the report of F. W. Dodge Corporation on the progress of the building industry and see that June construction contracts broke all records, we marvel anew at the vitality which building continues to show and see in it the basis for a big, prosperous plumbing and heating business. If it is not prosperous the fault must be laid at the door of the plumbing and heating industry itself, not to the lack of opportunity.

According to the Dodge review, building and engineering work contracted for in June in the 37 eastern states amounted to $632,478,000. There have been only four previous months in history that had as much as 600 million dollars in contracts. They were August, 1925, August, 1926, March, 1927, and April, 1927. The June record brought the volume of construction started during the first half of the year up to $3,187,993,300, which is 2 per cent ahead of the first half of last year, a year which broke all previous records and which many thought would not be equaled in 1927.

Dodge points out, however, that building construction has been running appreciably, though not seriously, behind last year, and that engineering work has largely increased. While this should not be overlooked in a check-up on plumbing and heating business, it should not, at the same time, indicate anything else than a wonderful market for plumbing and heating equipment. With such an opportunity it seems incredible that our field should allow anything to spoil it.

A lawn head and garden head in operation. The garden head is seen among the flowers

Lawn Sprinkling Systems

UNDERGROUND landscape irrigation systems, or *sprinkling systems as they are perhaps better* known, as a source of business and income have been largely overlooked by the plumber. While it is true that the installation of an irrigation system is not an every-day occurrence, within the last ten years great progress has been made and it has reached a point now where its value is appreciated, and it is being discussed all over the country.

Plumbers, in whose province irrigation installations surely come, have overlooked the money-making possibilities of the work, probably through lack of knowledge of the subject. The field is there, everywhere *that grass grows in* fact, and consideration should be given the subject by all energetic plumbing contractors looking for *more business;* and who are not? But installations should not be attempted without a knowledge of the problems and difficulties that are bound to arise. One *improperly installed system would cause* irreparable damage, not only to the contractor having made the installation, but to the industry in general, whereas a satisfactory one, one that fulfills to the utmost the ideas and expectations of the customer, is of infinite value. It is a self-advertiser; better advertising can not be bought at any price. Don't overlook the fact that the job is in the open, out where *the world passing by* can see it. What other part of the plumber's work is so situated?

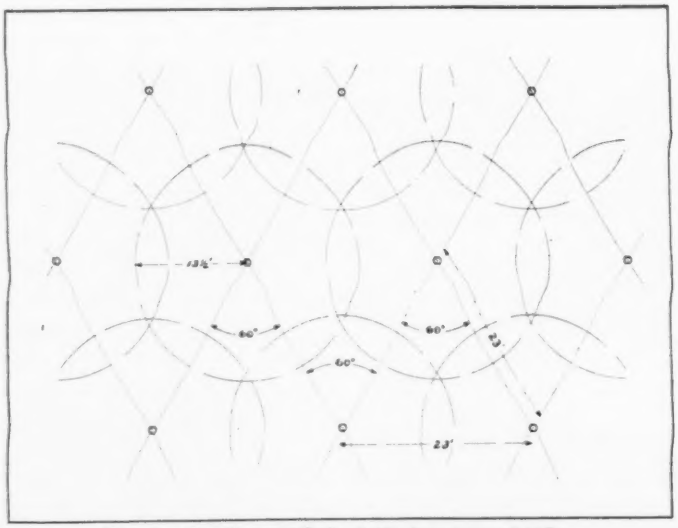


Fig. 1.—Showing method of placing spray heads

An irrigation sys*tem is primarily a* labor-saving device. For the small suburban home or still smaller city plot, it is the labor of the home owner that is saved. For the larger country estates, parks, or similar areas, the labor of many men, ordinarily engaged in sprinkling, is eliminated. Labor-saving devices are not hard to sell as the public is naturally interested

in anything that will save either money or labor, and in this case it is both. After interest has been aroused, the sale of anything, be it merchandise or service, is merely a *matter of how well you know your subject* and your ability to impress your prospect with the fact that that which you offer will serve him the best.

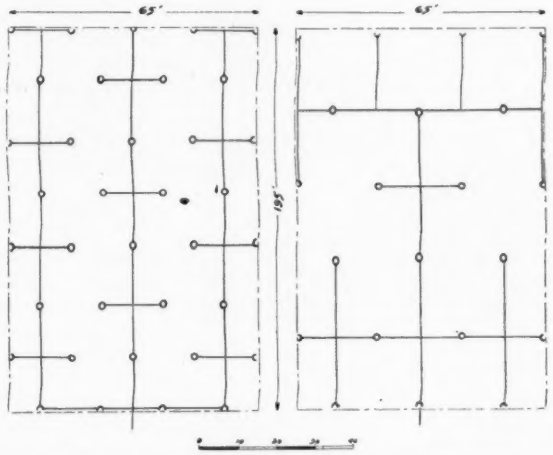


Fig. 2.—Showing economy in using head covering circle of greatest diameter. Left shows head covering 18 ft. and spaced 16 ft. apart. Right shows same area with heads covering 25 ft. and spaced 22 ft. apart. Left arrangement requires 36 heads and 809 ft. of pipe and trenching; right requires 21 heads and 418 ft. of pipe and trenching

If one merely purchases a few nozzles, or sprinkling heads as they are termed, gathers together some pipe, fittings, and valves, and goes forth to "put in" a "job," without knowledge of what he proposes to do, failure is *likely to occur; success, when attained, is an accident.* The following information is offered with the hope that it will assist the contractor to understand and to cope with the problems that are encountered in this kind of work.

DESIGN, MATERIALS, CARE IN INSTALLATION

THREE very definite steps are necessary to the successful irrigation installation; first, that a properly studied design or layout be prepared; second, the choice of the proper material; and third, but by no means the least in importance, that the utmost *care be taken in the actual* work of installation. Each of these three divisions will be taken up as we go along.

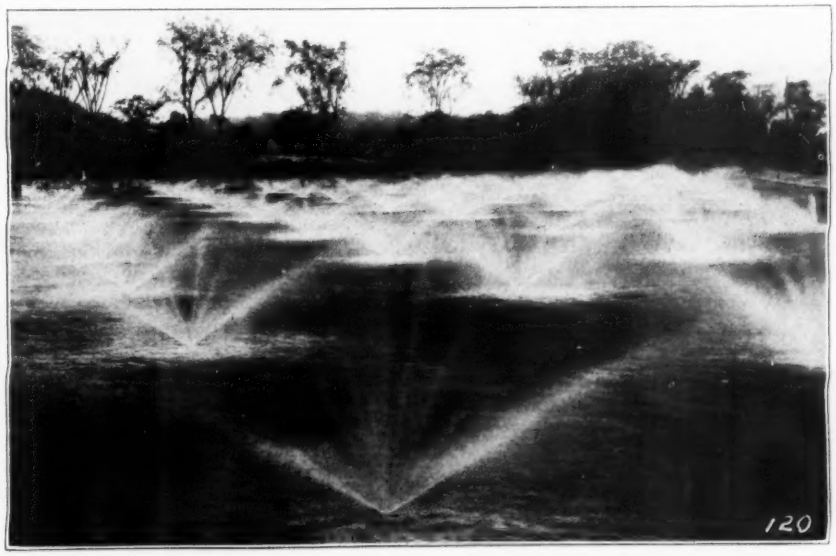
On designing a system, consideration must first be given *to the water supply*, the pressure at the source and the size of the supply line. Should the supply be a private water system the pressure and amount available are readily apparent. When the supply is derived from a municipal plant and delivered through street mains, the pressure may be ascertained through inquiry at the office, but an accurate pressure gauge should be used if possible to take a *personal reading* for unfortunately, water companies or city water departments often have faulty records and, oddly, they are usually too high.

In reading the pressure it is best that it be done in the evening when others in the neighborhood may be using their hoses, for that is the time when the contemplated system will in all probability be used, and the time of the lowest pressure. The spacing to which it is possible to place the heads, or in other words, the area covered by each head is dependent upon the pressure available.

The size of the supply line itself must be considered, for upon *this rests the amount of water that may pass through* without material loss in pressure through friction, and the amount of water passing through determines the number of heads that may be operated at one time. This is of utmost importance, may be readily computed and should never be neglected.

Assume that we have a job where 40 lb. pressure is available at the main. We are using a head which the manufacturer claims discharges 4.00 gallons per minute at 35 lb., and it covers an area of 27 ft. In order to get the maximum benefit of the head and keep the number needed down to a minimum, you should plan on spacing the heads 23 ft. apart. The heads should never be spaced as far apart as they discharge their spray, but should be spaced at a distance that will permit of overlapping to avoid dry spots between. The graph in Fig. 6 shows the distances at which heads should be spaced to cover various areas. In this case, you could afford to lose but 5 lb. pressure in all the lines. Assume further you find that the supply pipe from the main to be 2½-in. and the *length 100 ft. Reference to a table giving the friction loss* in pipe will show you that you could pass 100 gallons per minute through with a loss of 8.6 ft. in the hundred feet, or 3.7 lb. See friction table. But 25 heads might be operated at once, and 1.3 lb. might be further lost in the remainder of the system. Therefore it would be better to *figure on 20* heads or 80 g.p.m. so as to use a larger factor of safety.

After the available pressure and the size of the service line are known, study must be made of the particular plot or areas to be covered, the type of vegetation and the amount of water required. By amount of water required is meant whether the ground is shaded or exposed to strong sunlight, *the character of the soil and type of* vegetation. When heads are located in a lawn at more or less regular intervals, the system, when operating, will



An expansive lawn. Heads are spaced 28 ft. apart. Pressure, 35 pounds on each head

have an orderly appearance. This is accomplished by locating the heads at the intersections of two sets of equidistant parallel lines forming angles of 60 degrees with each other. This is illustrated in Fig. 1, in which is illustrated a condition where each head covers an area the diameter of which is 27 ft. The heads, however, are placed 23 ft. apart, so that they will overlap, leaving no unwatered spots between them.

After the regular lawn areas have been taken care of, it is necessary to consider the irregular plots, and the portions covered by shrubbery. For both of these there are special heads available. For the irregular plots, heads that cover ½, ¼ and other segments of circles are used, also special heads for garden and shrubbery installations. These heads will be described further along.

A garden installation. An example of half sprays in operation

GROUPING THE HEADS

WHEN all the spray heads are located, it is necessary that they be assembled into sections or groups. No more heads may be placed in any one group than it is possible to operate at any one time. This number will have been determined before.

In grouping the heads, it is excellent policy to have the gardens in separate sections from the lawn, and the sunny portions separated from the shaded, in order that these areas may receive a greater or less amount of watering, according to their requirements. This is particularly important in flower gardens, as flowers require considerably more water than do lawns due to the fact that their roots usually reach to a greater depth. In fact, it is hardly possible to divide any system into too many independent units for, by so doing, flexibility will result, and that is always to be desired. It is better that two or more sections be operated at one time. The system should be so arranged that each section can be shut off separately. This is better than to have to operate the entire system, or larger sections of it, for the sake of one portion.

It now becomes necessary to join the various heads together on the plan with the piping. The proper sizes must be used in order that the velocity may be equal in all lines and the pressure at each head approximately the same. When the pressure is equal, each head will cover the fully prescribed area according to the plan. Assuming that the pressure be 35 lb. and the head, under that pressure, be discharging 4 gallons per minute, only one head should be placed in a ¾-inch pipe, two on a 1-inch, five on a 1¼-inch, etc. This may be determined by reference to the table of friction loss in pipe. One head uses 4 g.p.m. Through a ½-inch pipe 4 g.p.m. would lose through friction 19.2 ft. in 100 ft. of pipe or a loss of 3.85 ft. in 20 ft. or 1.68 lb., entirely too great a loss for such a short run, therefore ¾-inch should be used in which case the loss would be nil. This same procedure should be carried throughout.

The next step is to connect the various sections to the main and arrange for control valves. It is sometimes advisable to bring the main to the center of the area and to run branch lines to the various sections, but then, the main may terminate in the basement of the house at the meter, in which case, branches would be run out from the basement to the various sections. In these branch supply lines, the control valves should be placed, and their placing is merely a matter of convenience. Under no circumstances, however, should they be located within the range of a spray head under their control, for if they are, the person operating them can never escape getting wet. This may seem unnecessary to mention, but the writer has seen just that happen on actual jobs. Ofttimes the valves are all located in one place, for example in the basement, but this is perhaps not the best practice, as the person operating them should be able to see what he is doing in order that he may not give someone a shower.

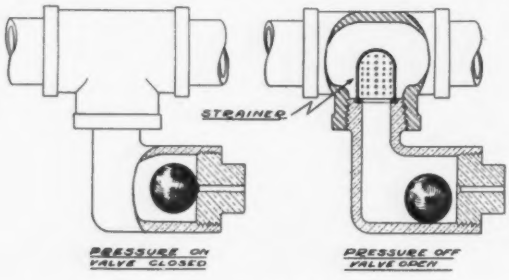


Fig. 3.—Showing drain valve

Fig. 4.—Swinging joint

CHOICE OF MATERIAL

THE CHOICE of material probably should be the first consideration, for without knowledge of the sprinkler head to be used the system could not be planned, for the planning of the system is of paramount importance from the very start.

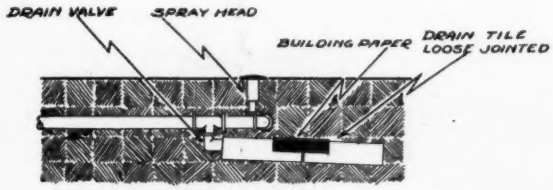


Fig. 5.—Showing setting of drain valve

In choosing the materials but two points need be considered, cost and quality; and the best quality is usually the least expensive in the end. For an irrigation system the materials needed are comparatively few,—pipe, fittings, spray heads, valves, and a few minor items.

The piping will, of course, be entirely underground, and therefore be continually exposed to corrosion. The principal material cost of an installation is the pipe, so cost and resistance to corrosion should be taken into consideration no matter what kind of pipe is used.

Good fittings should be chosen, also valves with all brass gates in sizes up to and including 2-inch, with iron bodies, full bronze mounted in the larger sizes. The best quality valves should be used as they must undergo daily operation. They are usually placed underground so must be, as far as possible, trouble proof.

Spray heads should be considered first from the economy standpoint, not the cost per head but the cost to install. If a spray head covers but an effective area of 18 ft. under a given pressure and another 25 ft. under the same pressure, the first head might cost less than half the second, but still be more expensive, as more heads would be needed, and entail additional pipe and labor to install. Since the cost of labor and pipe are the major items, anything that tends to increase one or the other should be avoided.

This is shown graphically in Fig. 2. The lefthand sketch shows a head covering 18 ft. and the heads placed 16 ft. apart to permit the necessary overlap. The sketch to the right covers the same area with a head covering 25 ft. and heads placed 22 ft. apart. In the first instance, 36 heads and 809 feet of pipe and trenching are required, in the second instance, only 21 heads and 418 feet of pipe and trenching are needed. The great difference in cost is apparent even on a small installation such as illustrated.

The head selected should also be foolproof. Heads should never be used that are easily put out of adjustment, as this might unbalance the system resulting in uneven coverage.

There are a number of spray heads on the market, but they all fall more or less in two general classifications, the type which is flush with the ground level and is without moving parts; the other, the pop-up type that is flush with the ground when not in operation and with an inner nozzle that rises above the surface when the water is turned on. Something can be said for both, but the writer prefers to leave that topic undiscussed. (It is recommended that each master plumber study the various types of heads. Names of makers are to be found in Domestic Engineering Catalog Directory or may be procured from "Domestic Engineering.")

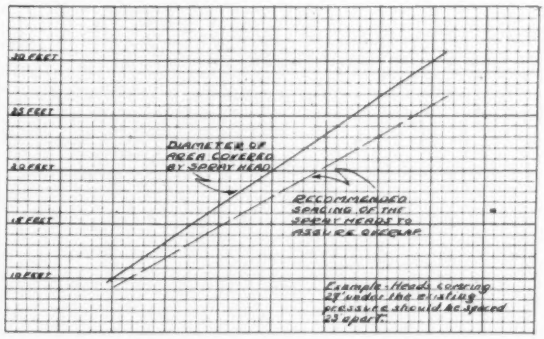
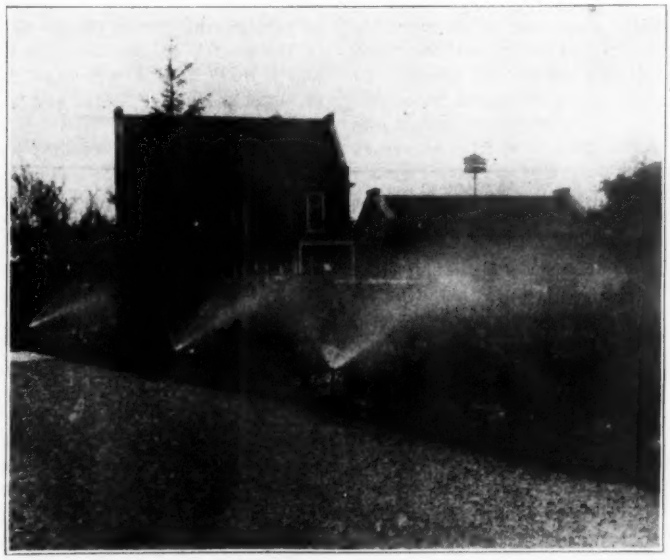

30 FEET
25 FEET
20 FEET
15 FEET
10 FEET
DIAMETER OF AREA COVERED BY SPRAY HEAD
RECOMMENDED SPACING OF THE SPRAY HEADS TO ASSURE OVERLAP
Example: Heads covering 25' under the existing pressure should be spaced 22 apart.

Fig. 6.—Graph showing proper spacing of heads at varying coverages

SPECIAL SPRAY HEADS

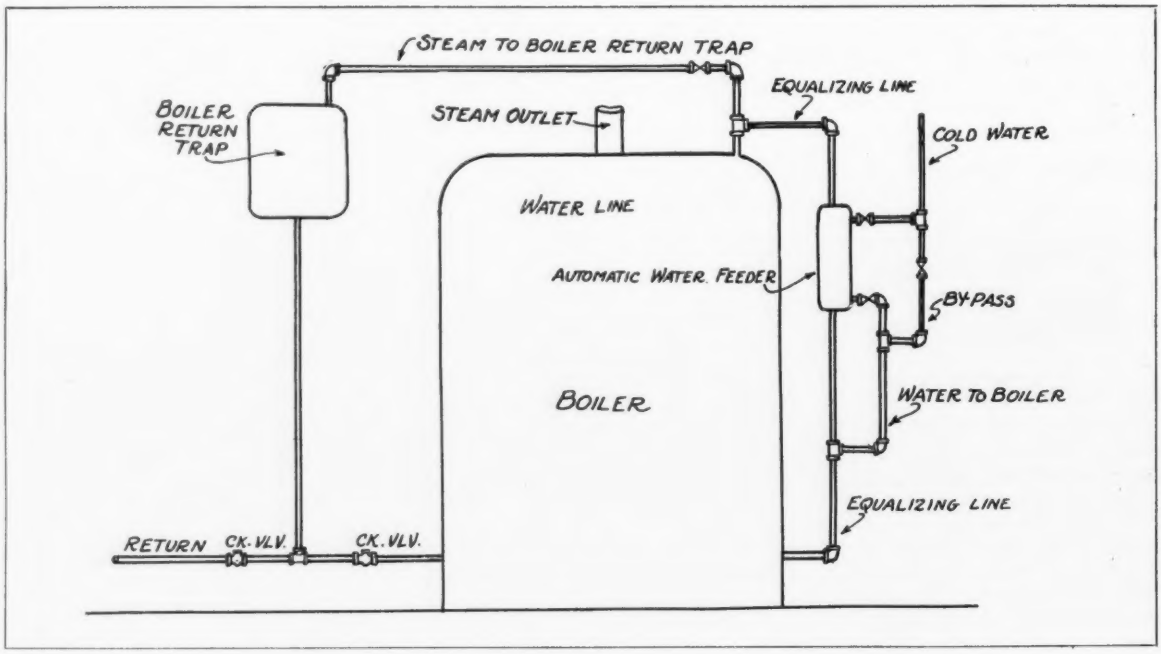
IN GARDEN areas or in shrubbery, special garden spray heads are mounted on riser pipes to bring them above the foliage in order that the spray may not be obstructed. These risers should be painted a green color to make them inconspicuous. Adjustable risers are obtainable and they serve an excellent purpose as the heads may be raised or lowered at will without the necessity of cutting and fitting additional pipe or cutting down the original. In vegetable gardens where the growth is rapid, it is either necessary to place the stationary risers very high in order that they may be above the ultimate growth or use adjustable risers. The use of adjustable risers is, of course, optional, but the unsightliness of the long protruding stationary ones during the early growth of the garden should be taken into consideration.

Heads in both the lawn and garden type are available in quarter, half and other segments of circles for watering irregular areas. The halves are used alongside of drives, walks and buildings that need to be kept dry and the quarters in corners, etc. Strip sprays may also be obtained for narrow



Another lawn installation. Note at right the half spray beside the drive

(Continued on Page 68)



Trouble with Equalizing Lines

By MAX PAUL MILLER

THE OIL BURNER has introduced many new necessities in connection with the low pressure heating plant, one of them being the automatic boiler feeder. The purpose of the automatic boiler feeder is to open a water valve in the cold water supply line to the boiler whenever the water line in the boiler drops to the danger point.

These feeders are generally composed of a casing in which one or more floats are placed to operate the fresh water valve to the boiler as the water line lowers. In order to accomplish this the casing is placed alongside of the boiler, and to maintain a true water line in the casing the same as there is in the boiler, it is necessary to equalize the pressure in the casing of the boiler feeder with the pressure carried in the boiler itself.

To equalize these pressures there is usually a line taken from the steam space on the boiler to the upper part to the casing on the feeder. **Then a second line is taken** from the bottom of the feeder to an outlet on the boiler below the water line. These are the two lines we wish to discuss here, so that you will not make the mistake that a very good friend of mine made in a bank in Massachusetts.

The most important point to remember is that these lines are equalizers. Their purpose is to equalize pressure, and if there is any way in which a pressure in these lines can occur different from the pressure on the boiler, they cease to be equalizing lines and do more harm than good.

Do not make connections with these equalizing lines for any other purpose than to operate the equalizer, or, for that matter, from any line intended as an equalizer, because if this is done you will always have trouble.

WHERE THE TROUBLE STARTED

LET me explain what happened on this small bank job, where the fitter used the equalizing lines to a boiler feeder to supply steam to a boiler return trap and to furnish the water supply to his boiler. Please refer to the sketch to see how these connections were made, and a little later I will explain how they were changed to make the boiler feeder and boiler return trap function properly.

This job had been installed about three months. Coal was used as fuel and I suppose the boiler feeder had been shut off. From all accounts, the installation had been operating very satisfactorily, but one day an oil burner was installed and after about a week's operation we received a call to hurry on the job. They could get no heat and there apparently was no water in the boiler.

You will understand this was a vapor system and this type of system will hardly work well without water in the boiler and does not work much better when the system is flooded. This latter condition is what we found when we arrived.

Naturally, no one knew how it happened. No one thought of examining the connections. So the first thing we looked for was trouble in the boiler feeder and to see that its internal mechanism was working properly.

We took the boiler feeder apart, examined each part and worked it on an open line by means of the floats to

(Continued on Page 71)

Solving Chinese Puzzles

One of the better class of foreigners' residences, Shanghai, China

By AN AMERICAN ENGINEER

The following is a story of the experiences of the Eastern representative of an American plumbing and heating contracting firm while operating in the Far East. The former parts of this story appeared in "Domestic Engineering," March 26 and May 28, 1927. The fourth part of the story will appear soon:

THE NEXT contract was for the plumbing and heating of a Chinese bank in the city of Hangchow which, it might be added, is a city with a population of several millions. Up to the time of the installation covered in the contract above mentioned, it had never had a modern plumbing or heating installation. According to the terms of the contract, the owner was to provide a well and septic tank, the septic tank to be constructed according to designs prepared in our "engineering" department.

In due course of time, about three years, the building was completed; the heating system was tested out and accepted. But the house pump gave a great deal of trouble. The well had been put down in fairly good shape and had water in it about 15 ft. below grade. This was tested several times by the Chinese and the report was always the same. Therefore there seemed no reason to suspect that the well was the cause of the trouble. The pump was set in the basement of the building and was located, as shown in Fig. 1, so that the suction lift was only about 11 ft. The discharge head was re-calculated and pipe friction figured, all of which showed that the pump had plenty of capacity and head to do the work. But the fact remained that when started up, it would pump a minute or so and then stop delivering water. The bank people maintained that the pump was defective and that it was up to the contractor to put in a new pump.

Things finally became so acute that it was necessary to make a special trip to that city in an endeavor to find out what the difficulty really was. Upon arrival, the pump was opened up, the impellers removed and examined; nothing wrong! The pump was started and it delivered water for a minute or so, then fell off to nothing.

A faucet was connected on the suction side with the idea of finding out whether the pump had lost its suction on account of air being drawn into the suction line after it was started, and thus breaking the vacuum on the suction line. Opening this faucet and placing the finger over the outlet, the pump was again started and, although there was a very strong suction pulled and constantly maintained, the delivery of water ceased even more quickly than before. Satisfied that there was nothing wrong with the pump, investigation was then made of the well. The well proved to be nothing but a pipe sticking down in the ground about 200 ft. inside of which the Chinese fitter had inserted the suction line of the pump, running the suction line down about 50 feet.

CHINESE WELLS

NOW most Chinese wells are built along the same general lines; although called "artesian" wells, they are really nothing but plain "driven" wells. A hole is put down in the ground and a pipe is inserted in the

hole, this pipe running from 4-in. size at the top down to 2-in. size at the lower end. Around the bottom end of this pipe is wrapped cocoanut fibre or copper wire gauze to keep the open end from being stopped up by the dirt that is drawn into the pipe. These wells, however,

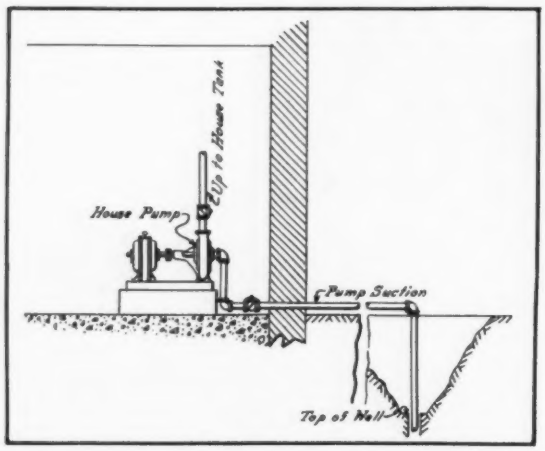


Fig. 1

never flow naturally. The water in them rises to about the same level as the ground water, which is generally about 4 ft. below grade. A typical detail of such a well is shown in Fig. 2.

As might be supposed, this flow, owing to the wrapping on the bottom of the pipe combined with its small size, is very slow. To overcome this difficulty it is the custom to provide a cistern on the top of the well in which the water will gradually rise and collect until it reaches the level of the ground water. If the bottom of the cistern is below the ground water level, the water will accumulate in it, but if the bottom is above the ground water level, the water will only stand in the pipe.

Following the pump suction line back to the well location, there was no sign of any cistern and the explanation seemed to be that the pump, when it started, had the water level in the well pipe at the normal height, but that the pump capacity was so much greater than that of the well that it drew down the water level in the well pipe until the pump could no longer negotiate the added suction lift, and at that time water ceased to be delivered. So the owners were advised that, if they would provide a proper cistern such as was customary with wells of this character, all would be well.

This they agreed to do, and then humor entered into the situation for, when the new contractor started to excavate for a cistern he uncovered a first class concrete cistern which the original well man had installed at the time the well was driven and which the general contractor in the three years he had been constructing the building had covered up with dirt from various sources! The cistern was dug out as carefully as were the remains of King Tut and was put into commission, after which no more trouble was encountered.

THREE JOBS IN MUKDEN

FOR the sake of variety, the next work taken up was the plumbing and heating for two double houses and a small office building being built by an American hong (company) in Mukden. All companies are called "hongs" in China, this being the Chinese name or word for "company." Mukden is a city in Manchuria where the winter temperature goes to 20 and 30 degrees below zero (according to the statement of local inhabitants) and is three days from Shanghai by train or boat. Naturally this work was carried on under great difficulty on account of the distance from the source of supply and would be equivalent to a contractor in Chicago carrying on work in San Francisco and shipping every single item required, from radiators and plumbing fixtures down to oakum and red lead, from Chicago. Only the boats do not run every day and train shipments are not only very costly, but have to be transhipped twice before they reach Mukden. The only way to get a train shipment through with any speed, as was found out after many sad experiences, is to send a native along with it. He takes his bed, buys a supply of chow, and rides along with the goods until the destination is reached. Expensive? No, not at a salary of $15.00 per month, for it usually takes only about two weeks with this arrangement. You could never tell when it would arrive if he didn't go.

Where winter temperatures reach even 20 degrees below zero, one should strive to avoid trouble with the heating system. But difficulties arose nevertheless. One

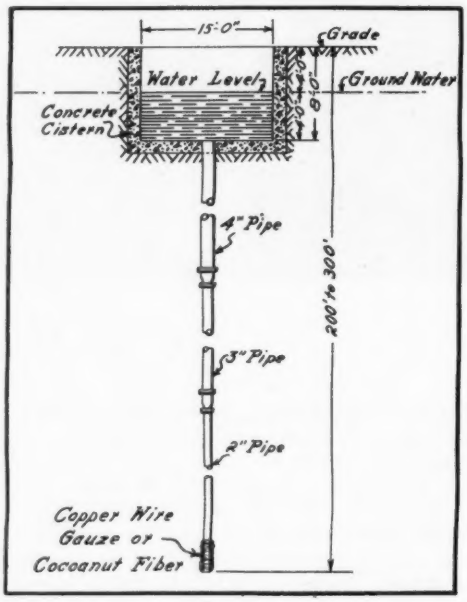


Fig. 2

peculiarity of the Orient seems to be that if there is one single thing which it is desired should not happen, it is sure to happen and happen badly! When it began to get cold, several letters were received stating that the "heat was not heating." So, early in January, a trip had to be made to Mukden.

The heating systems installed in these buildings were vapor systems simplified to the extent of using a vent pipe to relieve the air, with a check valve in the vent so that, when the steam went down, a vacuum could be pulled. The piping seemed all that could be expected but when the boilers were fired up, only about half the radiators heated. All of the three systems acted the same way. The Chinese fireman who happened to be the same man for all three jobs, insisted that with five pounds he could "make more hot—maybe ten pounds can do," meaning that if he was allowed to get up five pounds pressure he thought more of the radiators would heat, but with ten pounds it might be possible to heat them all. He had been given instruction previously, however, to run at nothing over 1 pound.

FOUND VENT PIPE PLUGGED

ALL the fires were allowed to go down and everything was allowed to get cold; then the steam pressure was slowly raised to 1 pound and the results were noted. Sure enough the radiators only heated about half.

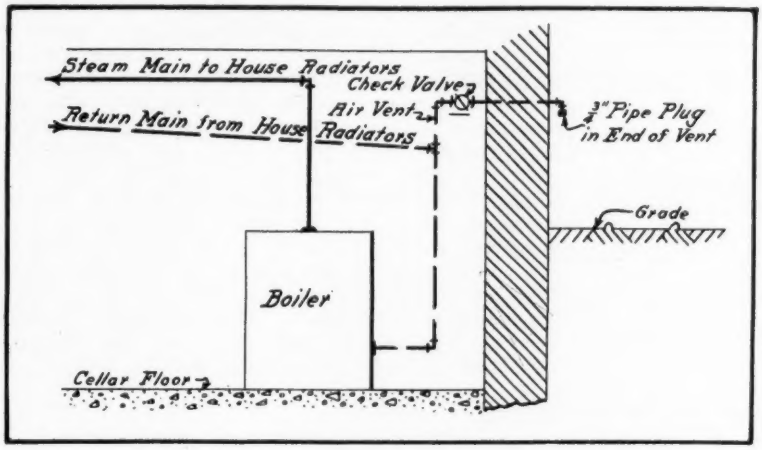


Fig. 3

The check valve was opened and a lot of air rushed out, after which the radiators heated a little more but by no means properly. Seeing by this that the trouble seemed to lie in the venting, the end of the vent pipe which had been terminated outdoors was examined and it was found to be neatly plugged up with a ¾ in. pipe plug. (See Fig. 3). All three jobs had been similarly treated. Accused of doing this, the fireman admitted that he had plugged up the vents because 1 pound pressure was "no proper" and he could not get higher pressures with the vent open without driving the water out of the boiler. So he had fixed the matter according to his own ideas.

The plugs were removed and immediately all the radiators got busy. So a trip involving six days on the train, one day on the job, and several hundred dollars was caused with the sole accomplishment of removing three ¾-in. pipe plugs!

Another amusing heating experience which occurred about this time was on a large postoffice building where gravity hot water heating had been put in some time before by another contractor. The postal commissioner complained of not being able to heat the building properly, and asked that an investigation be made to determine what alterations in the system would be required to remedy the matter.

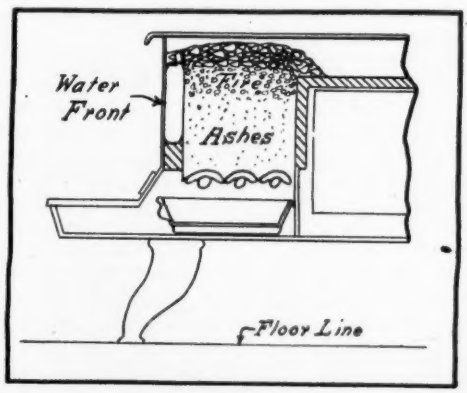


Fig. 4

As usual, the cause of the trouble was the last thing in the world which could have been imagined! After thoroughly going over the system and finding nothing serious, the Chinese engineer who ran the boiler was interrogated and he furnished some very enlightening information. According to his story, the postal authorities were in the habit of purchasing half a ton of coal per day, this coal being delivered late every afternoon. This half-ton was all the coal the engineer received for 24 hours and he had to make it do.

Investigation of his story proved it, strangely enough, to be entirely true. The idea was to prevent stealing or selling of the coal such as might occur if large quantities were purchased and delivered at one time. The quantity of coal which would have to be burned in extreme weather was found to be about 1¼ tons, but the postal commissioner was trying to heat the building on ½ ton per day. After the matter was explained to the powers that were, they reluctantly agreed to buy a little more coal on cold days. Running as they had been doing, all the coal was burned by 12 or 1 o'clock on cold days, although the heat remaining in the water would supply a certain amount of comfort another hour or so, then it began to get cold, and by 4 o'clock it became decidedly uncomfortable.

NO HOT WATER

ABOUT this time, several private individuals who were living in rather nice houses thought that an American cook stove with a water coil in it to heat a

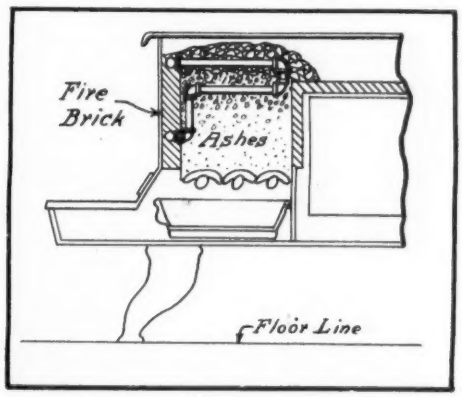


Fig. 5

hot water tank would be a decided improvement over the use of a Chinese stove and buying their hot water by the bucket. They were correct in this as, of course, you will agree; in fact, they were rather forced into this by the desire to use bathtubs, lavatories and showers which were already installed but which were without hot water connections. So the stoves and tanks were duly ordered, arrived and were installed. But they got no hot water.

This was due to a combination of several causes: first, the hot water was wasted by the servants, second, the natives never maintain a kitchen fire except when cooking, third, they did not know how to build a fire that would get results, and fourth, they expected a coil in a

small kitchen stove to supply hot water for laundry work, ordinary family requirements and shower baths.

As soon as the servants discovered that hot water was on tap without the expenditure of effort or money on their part, they promptly proceeded to utilize it in every conceivable manner, even washing their clothes and the

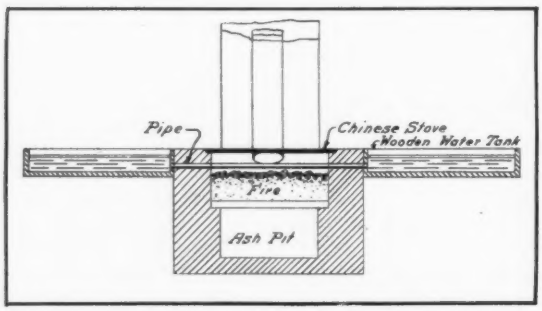


Fig. 6

clothes of their relatives. More than this, they were wasteful of it and liked to wash the dishes by opening the hot water faucet and letting the water run during the process. After this was over, they thought it would be nice to wash their own chow bowls and more water was wasted. The removal of hot water faucets from the kitchen was the only way this could be stopped.

Every Chinese cook will have the coolie make a fresh fire every time he cooks a meal. This is particularly true in the afternoon and is usually true in the morning as well. Consequently the water, after being used for morning washing, does not have an opportunity to become heated again before the fire goes out. What little is heated by the fire built for the noon meal, or "tiffin" as it is called, is used for washing or other purposes almost before it is warm. At 2 o'clock the fire is again out until about 6 or 7 o'clock when a new fire is built for dinner.

Those who are used to eating at 6 or 6:30 in the evening may think a mistake is made when it is stated that a fire is often started at 7:30 for the evening meal, but that is not so. The usual evening meal time in the East is from 8:30 to 9:00 p. m. However, the English custom of having tea and cake at 5 o'clock is indulged in to keep one from starving to death during the long interval.

This intermittent firing, however, was not the worst condition with which it was necessary to deal. The Chinese practice of using soft coal in the kitchen stove and of keeping the fire up close under the top of the stove was worse. This caused a bed of ashes to accumulate in the bottom of the fire box and to insulate the waterfront or pipe-coil from the heat of the firebox. The manner in which the average fire is maintained is illustrated in Fig. 4.

Finally a method of overcoming the difficulty with ashes was evolved, but it necessitated abandoning the water front and the use of a pipe coil which entered the fire box through the regular bottom connection, immediately rose, as shown in Fig. 5, and ran around the top of the fire box with the return loop slightly above the top. With this scheme it was necessary to cut a new hole in the side of the stove to allow the top pipe of the coil to leave the fire box without dropping down again and forming a pocket. Incidentally, the carrying of a fire so close up under the lids and of such intensity as is produced for short intervals with soft coal, burned out the iron in the top of the stove in about 12 months!

HEATING WATER BY A CHINESE METHOD

WHILE on the subject of hot water, it may be of interest to the heating trade to learn of a Chinese method of heating water as observed in a foreign hospital in Canton. In the kitchen, a Chinese brick stove had been in use for cooking and, to supply hot water for washing dishes, a wooden box had been built on each side of the stove as indicated in Fig. 6. Between the two boxes, and running through the fire in the stove were two ¾-in. perfectly straight pipes with open ends terminating in the boxes. The boxes were filled with water which, of course, flooded the pipes, and after the fire was going well, steam was formed in the pipes and could only find an outlet by blowing out of the ends of the pipes and through the water in the boxes; this in time resulted in warming the water and, if allowed to continue long enough, produced boiling hot water. Where the pipes entered the boxes, the holes around the pipes were caulked with yarn. This apparently provided enough expansion to take care of the lengthening of the pipes when heated and kept the water from running out of the boxes.

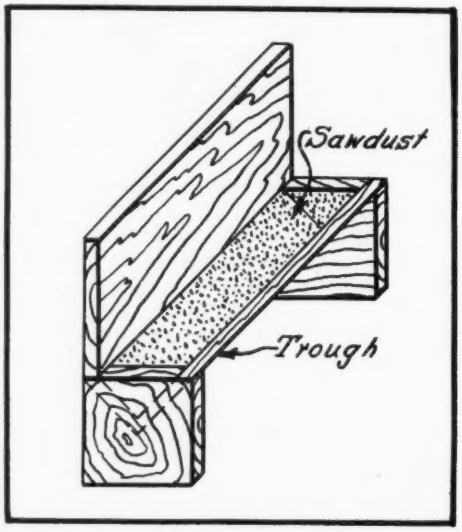


Fig. 7

A CHINESE PLUMBING IDEA

IN ANOTHER hospital up the Yang-tze-kiang river the American doctor volunteered the information that he had discovered a new type of urinal and, upon being courteously pressed for details, produced a wooden trough somewhat like a pig-trough and filled with sawdust from some local wood. See Fig. 7.

He claimed to have tested a similar device for a period of two years without changing the sawdust and that his Chinese servants used it for a urinal during that time. He stated that after two years of use he took the same box and sawdust to a convention and exhibited it and that there was not the slightest odor from it.

This statement, it is believed, must be taken with a liberal saline solution. What probably happened was, while the good doctor thought his urinal was in regular use, the Chinese had reverted to custom and promiscuousness. Why should they go out of their way to use a box when there was so much ground surface available?

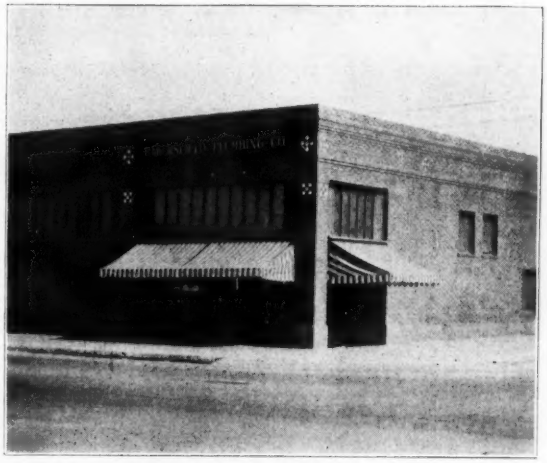
Upland, Calif.—Preliminary plans have been completed for the new junior high school building costing $100,000 and designed to contain 14 rooms and an auditorium.

Make a Stir!

Do things in a way that makes people sit up and take notice is MILT MARVELS advice

DID you ever know persons who, the moment they entered a room, no matter how crowded it might be, made a stir? Made people look at them, listen to them, be interested in them? They aren't clowns, they don't try to be the life of the party—but just because they have a surplus of personality, they attract attention.

Something like that is necessary to the retail merchant who is going to make an impression—a lasting impression—on his community. If you want to learn how that is done, make a study of retail establishments in your own town. Don't confine yourself to our own industry. Analyze the various retail stores. Pick out for yourself the one thing that seems to make one store differ from another. If you can find half a dozen of those differences, take it from me you have found half a dozen things you can take with you and apply to your own establishment.



A corner store with displays looking on both streets

WHAT "MAKES A STIR?"

I NEVER saw a live community yet where a man with his eyes open and his mind working couldn't pick up a few ideas by studying the retail shops, both their windows and their interiors. I can remember—and no doubt you can, too—stores in which I haven't been since I was a boy. And I can tell you what it is I remember. One was a small neighborhood department store. It was run by the kind of a man who, when the big stores downtown began to draw more and more trade away from the neighborhood shops, complained bitterly. Yet what I remember about that store is the awful clutter of merchandise and the awful clutter of arrangements for taking care of customers. Almost every time you tried to buy something, the girl had to run to the proprietor to find out what it cost. And frequently the proprietor had to refer to the clerk, to the woman who had some sort of responsibility for the clerks! And I can remember a little combination cigar and candy store run by an old couple. Every time I get a whiff of the combined smell of cigars and candy my mind goes back to that little shop and I can see those shining cases and that wonderfully clean floor, and the neat little displays of candy, pipes, cigars and magazines in the windows. Those were windows that

This store would create a stir anywhere

tempted men to buy cigars, women to buy magazines and children to buy candy.

There are a lot of plumbing and heating shops that I've seen that I remember with pleasure. They caused a stir of admiration in me when I saw them. It was obvious that someone had taken a real interest in planning the displays, in working out the arrangement of the store.

That's what I mean when I say, "Make a stir." Study your merchandising problems with an idea of stirring the individual who sees your store, your window displays, your newspaper advertising, your direct-mail advertising, to admiration, and to desire for the products and the service you offer.

so familiar and unchanging that even its unusual character will at last cease to attract attention. His problem, in other words, is to keep on making a stir until every passerby has at last made a purchase there and so made the first step in the direction of regularly trading with him.

MAKING WINDOWS SELL

HERE'S the type of window display that turns the trick. You know the old saying that "Comparisons are odious." You know, too, that there is an actual need in many a home for a new toilet seat. How to put that thought over? Mr. Walters selected several horrible examples of toilet seats which had been taken out of homes.

Ready to be used—the fixtures are mounted against mahogany panels

A STORE THAT MADE A STIR

HERE'S a store in Bakersfield, Calif., for instance—the store run by R. I. Walters under the name of Bakersfield Plumbing Co. If you will take a moment to look at the view of the interior, you'll get some idea of what I mean by causing a stir. Even in the picture you can't fail to miss that individuality, that personality. Did you ever see a plumbing shop just like it? I never did. And therein lies the reason why it stirs me to admiration and the reason why it has attracted attention in Bakersfield. It's different. It surrounds the plumbing products displayed with an atmosphere that adds attractiveness to every fixture displayed.

Such a store—particularly a plumbing store—is bound to cause a stir in any neighborhood. The walls are buff and you will note on either side a large and beautiful mural painting of an old square-rigged ship at sea, which is very much to the popular taste these days. Up to five feet run mahogany panels. The floor is in gray and white checks, each a foot square. Ornamental lighting fixtures top off the effect and a comfort station for ladies shows that, in this store, they practice what they preach.

The store, as I say, is in itself sufficient to create a stir. But Mr. Walters felt that, having prepared the place, it ought to be talked about a little. So, during the opening week, he invited visitors to see the store and offered some special inducements.

Having established such a place of business, Mr. Walters has sought ideas that will keep it from becoming a place

He put them in his window. Next to them, for comparative purposes, he placed a group of new white seats. The comparison was plain, of course. Now to clinch it. Mr. Walters offered a one dollar allowance for every old seat replaced by a new one. The idea worked and the results were very satisfactory. He had created a stir of interest in the idea of replacing old toilet seats—at a profit to himself.

Merchandising is a lot like dropping a stone into the water. It starts a ripple which broadens in a circle until it has used up all of its force. If you drop one stone into a quiet pool, you can watch the ripple spread until it touches the edges of the pool and disappears. In other words, it lasts for just a brief moment in which it creates a small stir in the pool. But if you drop stones at half a dozen or a dozen points in the pool, watch the ripples spread all over, meet and pass each other, until the whole surface of the pool is disturbed. That's the difference between spasmodic merchandising and constant and consistent merchandising.

So, in Mr. Walters' case, you have an example of constant merchandising. His store, his methods of using his windows, help to keep interest in his place of business. When there's a county fair, there's a booth for the Bakersfield Plumbing Co., showing various fixtures and announcing that this is the booth of the "Largest and Leading Plumbers in the County." Another ripple. Then there's a mailing list of six hundred names, taken from the local telephone book and from the accounts of the company,

(Continued on Page 72)

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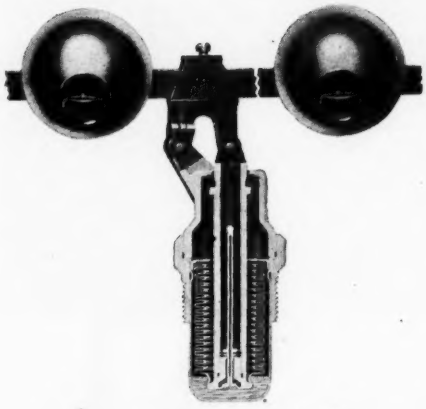


ARCO WATER REGULATOR

No. 800

Regulates drafts automatically. Saves fuel. Prevents overheating. Insures steady even warmth.

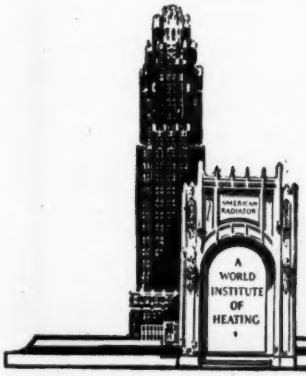
You can't earn much more than wages unless you get *some* business at a preference—*some* without competitive bidding. You have something to sell besides labor and materials. You have comfort and convenience—over a long period of years—to sell your customers.

With the No. 800 ARCO Water Regulator your customer gets this comfort and this convenience—*free*. Because it pays for itself in fuel savings again and again. It will save your customers endless trips up and down basement stairs to adjust drafts. It adjusts the dampers of any hot water boiler automatically. It is constantly on guard against the waste of overheating or underheating.

But—your customers cannot know these things unless you tell them. Tell them what this very slight additional expenditure means to them, and how quickly the ARCO Water Regulator will pay for itself—and they will buy.

Many of our good friends in the Industry have been making it a practice for years to install an ARCO Water Regulator on every hot water job as standard equipment. The customers, for the most part, do not know the real reason for the better performance of their installation, and the heating merchants' foresight in providing the convenience brings them the full credit and earns them the reputation of being the heating specialists of their respective communities.

If you will build a real business for yourself, don't depend on being the lowest bidder on every job. Plan your bid on the basis of a real job—and then sell that bid.



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Standardization *of* Fuel Oil

Preparing for the aeroplane survey of oil shale fields, Rifle, Colo.

By GEORGE M. TURNER

Department of Petroleum, Pomona College, Claremont, Calif.

WHAT is fuel oil? If this question were asked of ten refiners of crude oil, scattered across the country, it can easily be imagined that there would be ten different answers. Apparently "fuel oil" is the name given to that portion of a barrel of crude which the refiner can market in no more advantageous manner. It is perhaps to be expected that the consumer and the distributor of fuel oil are not always happy in their business relations.

It seems obvious that there are at least two distinct types of "fuel oil" users, owners of industrial plants and home owners. The first produces steam for power purposes and employs one or more boiler attendants to look after the proper operation of the heating equipment. They have a very different problem in the use of fuel oil from the problem of the householder. He uses automatic control, and pays no attention, except possibly twice a day, to his oil burner equipment.

That the employment of liquid fuel for domestic use is here to stay seems very obvious. As was mentioned in an article in "Domestic Engineering," on "Oil for the Future," by R. L. Welch, the consumer who is willing to pay for a six-cylinder automobile is also willing to pay the price necessary to avoid shoveling coal and removing ashes. The only real competitor (in the future) for liquid fuel for domestic heating in the six-cylinder-automobile home, is gas. Recent investigations in the low temperature destructive distillation of coal and lignite indicate possibilities of a low-priced gas fuel for distribution. It is recognized that where natural gas is available as a fuel for domestic, as well as for industrial purposes, it will enter the competition with oil. However, it seems probable that for some time liquid fuel will find an increasing use for heating purposes in the home and in industry.

SPECIFICATIONS FOR FUEL OIL

AT THE meeting of the American Petroleum Institute in Los Angeles, January 19, 20 and 21, 1926, several papers were read concerning oil as fuel. At that time, some little discussion arose between the oil burner men and oil distributors, relative to the characteristics of oil suitable for fuel purposes. The oil burner representatives thought those supplying fuel oil should have certain trade names representing fuels of definite character that would be commonly accepted across the country, so that an oil burner salesman might recommend a definite oil adapted for use in a particular burner. On the other hand, representatives of the refiners and distributors of fuel oil insisted that the oil burner manufacturers had never agreed upon just what they wished in the line of specifications, hence the confusion. It was pointed out that neither gravity nor viscosity were sufficient to give uniformity of product from varying crudes.

To the writer it seems that there should obtain by mutual agreement, under the leadership of the American Petroleum Institute and the American Oil Burner Association, a set of specifications that would identify rather definitely, at least two, possibly three, kinds of fuel oil. The so-called "navy specifications" for gasoline have done

wonders in standardizing the product used as fuel in automobiles. The writer lives in a section of California where the appearance of a new brand of gasoline is as frequent as was the appearance of a new breakfast food a few years ago. Yet of fifteen or sixteen varieties, picked up at distributing stations in California, nearly all fulfil and none depart materially from the "navy specifications." Tourists crossing the continent, make very little complaint regarding the gasoline they buy. Even the gasoline bought at lone, out-of-the-way stations is not often the cause of complaint.

It should be equally possible to standardize two, or perhaps three, kinds of fuel oil, based on certain initial and final boiling points and the maximum temperatures when 20, 50 and 90 per cent shall have been distilled over. Particularly would such specifications secure a dependable product for domestic use (where high pressure steam is not available) even with crudes of widely varying characteristics. Where steam is available for keeping the oil fluid even in cold weather, there is less need of distillation specifications. It is, however, essential that even this type of oil be free from suspended solid matter.

It may be claimed that the consuming public will not pay the price for fuel oil put out on specification. Experience, however, shows that the householder who lives on the six-cylinder-automobile plan and the manufacturer who runs his plant on an efficiency basis will be willing to pay the price of dependable fuel.

Wisconsin Society of Plumbing Inspectors Meets in Kenosha

President-Elect Frank R. King

WISCONSIN stands high in the esteem of all expert sanitarians on account of its sanitary legislation and sanitary progress. The credit is due, for the most part, to the industrious and conscientious plumbing inspectors of that state. On July 16 and 17, the Wisconsin Society of Plumbing Inspectors held its seventh annual meeting at Kenosha, Wis. There was not a large attendance, but the old guard that did attend are among those who have made the state of Wisconsin (small though it may be from the point of view of population) one of the biggest states in the union from the point of view of sanitary progress.

Wm. Streich, plumbing inspector of Kenosha and president of the society, was in the chair, Eugene Morse of Eau Claire, secretary, performing his official functions as usual. The society was welcomed by C. M. Osborne, city manager of the rapidly growing city of Kenosha.

John H. Owens of Racine discussed safe water supplies. Sometimes, he said, it requires a typhoid epidemic to force people to secure needed improvements in the water they use. How far typhoid bacteria will travel over an underground rock table, direction of water travel as related to the contamination of wells by the effluent from cesspools and septic tanks, the rise of bacteria to the water level when water is high, thus contaminating wells only at high water periods, methods of construction of wells, the use of coloring matter to detect the direction of flow of water from cesspools, etc., were also discussed.

There are between 300,000 and 400,000 private wells in Wisconsin, Frank R. King, of Madison, Wis., explained, so that approximately one-half of the people of Wisconsin drink water from wells. He believes that most of the pollution of wells comes from the top or near the top and that it is difficult to find a case of sickness due to pollution of well water from effluent entering the lower part of the well.

R. E. Hasselkuss of Madison pointed out the conditions that should prevail in private sewage disposal systems. He discussed the impetus given the building of residences since 1917 and its effect upon the installation of private sewage disposal plants. He has found many instances where people had constructed a dwelling and put in a private sewage disposal system without getting any advice from the plumbing inspector or board of health only to find that the system constituted a menace to health and had to be taken out. The purpose of his paper was to call attention to this condition so that plumbing inspectors might warn prospective builders as to the necessity of proper location of cesspools and septic tanks.

Frank R. King presented a very lengthy paper on plumbing in high buildings. This will be taken up in a separate article to be published in "Domestic Engineering."

Others taking part in the meeting were John Bauer, Appleton; H. M. Hoover, Beloit; Eugene Morse, Eau Claire; George Slightam, Janesville; W. J. Meltzer, Madison; J. H. Peppard, Manitowoc; George Stolz, Milwaukee; Wm. Liegler, Racine; Jacob Scheck, Sheboygan; J. J. Wahl, West Allis; Emil Disch, Wauwatosa; Anton Vogt, Waukesha, and L. B. Spafford, Chicago, who gave a talk on the function of the plumbing inspector and how he can make his work more valuable to the community that he serves.

Through the courtesy of the American Brass Co. and Frost Mfg. Co., the members were conducted through the plants of these concerns located at Kenosha.

Officers and committees for the ensuing year are Frank R. King, Madison, president; Harry Hoover, Beloit, first vice president; Jacob Scheck, Sheboygan, second vice president; Wm. J. Meltzer, Madison, third vice president; Eugene Morse, Eau Claire, secretary-treasurer.

Program committee: George Slightam, Wm. J. Meltzer and Frank R. King.

Auditing committee: Harry Hoover, A. T. Welsh and Ernst Schneider.

Resolution committee: Wm. J. Meltzer, Wm. Streich and Michael Murray.

Committee on education and press: Frank R. King, Roland Henke and Irving G. McCreedy.

Committee on entertainment: John Owens, Edw. Wittig.

Committee on membership: Jacob Scheck, Eugene Morse and Wm. Liegler.

Committee on research: J. H. Peppard, Emil Disch and Wm. Nern.

Committee on convention city: A. G. Jamesson, J. H. Peppard and Wm. Isleb.

Committee on laws and regulations: George Slightam, R. E. Hasselkus, John Owens, George Stolz and Jacob Scheck.

The city in which the 1928 convention is to be held has not been decided upon.

Salt Lake City, Utah—Scott & Welch, architects, are preparing the plans for the new bureau of mines building at the University of Utah. The building will cost approximately $100,000.

Look for this attractive picture in full color in the Kohler advertisement in The Saturday Evening Post, July 16, and Liberty, July 30

A new conception of what Kohler means to the plumbing industry

THOSE who attended the National Convention at Minneapolis last month saw the finest exhibit Kohler Co. ever made. They saw Kohler enameled ware, vitreous ware, plumbing brass, electric plants, and the *Kohler Electric Sink*—the hit of the show!

These visitors went away with a new appreciation of the bigness of Kohler and, at the same time, its friendliness; of the completeness of the Kohler line and, at the same time, the superior worth of each individual item in the line. They gained a new conception of what Kohler means to the plumbing industry.

Kohler Co.'s reputation for quality, entrenched by strong national advertising, and Kohler progressiveness in introducing new products like the Kohler Electric Sink, are broadening the business opportunity of every plumbing dealer who sells the products of Kohler of Kohler.

KOHLER CO., *Founded* 1873, KOHLER, WIS.
Shipping Point, Sheboygan, Wis. · *Branches in Principal Cities*

KOHLER OF KOHLER
Plumbing Fixtures

Opportunities for Selling KENNEY Thermo Valves.

"SNAP ACTION"

No. 2 of a Series

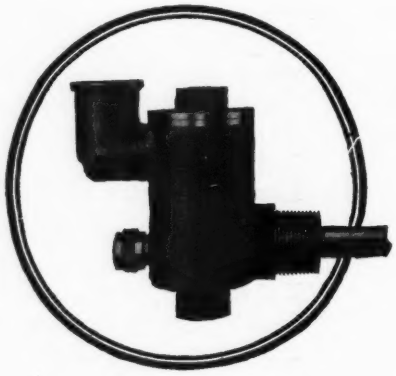
Bakeries

are good prospects

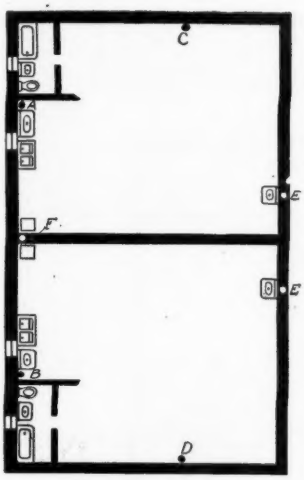
YES, bakeries are ripe sales prospects for KENNEY Thermo-Valves (Snap-Action.) They need plenty of hot water—they need it on the instant — they need constant, *clean* water heated to the right temperature! The KENNEY gives them what they need — ever-dependable, easily installed, free from any servicing problems and profitable for you!

KENNEY
THERMO VALVE
"SNAP ACTION"

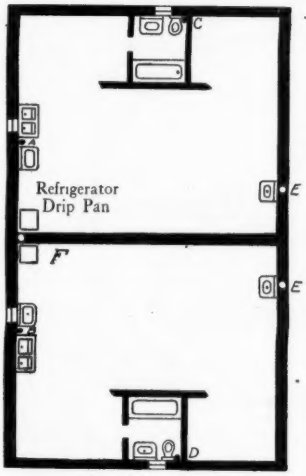
brings up-to-date hot-water storage convenience. Attached to any boiler, it instantly converts the boiler into a storage heater! Always, unfailingly, automatic! Safe and clean! Rugged and durable! Trouble-proof! Simple and sure! And an every-day ready-selling item! Plumbers, manufacturers, jobbers — investigate.



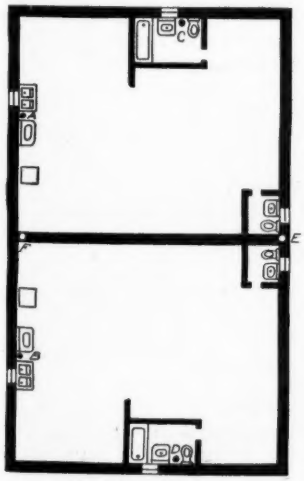
FLANNERY MFG. CO.
FLANNERY BLDG. PITTSBURGH, PA.



Third Floor Plan

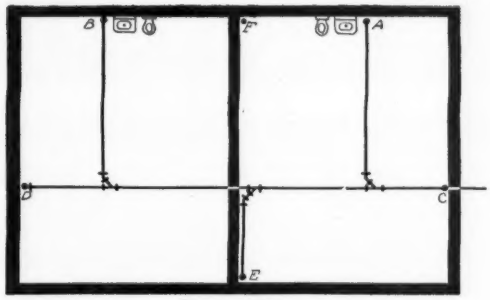


Second Floor Plan



First Floor Plan

Basement plan and three floor plans upon which this problem was based



Basement Plan

An Opportunity for
Plumbing Education

WHAT a tremendous change has come about in everything concerning plumbing during the last twenty-five or thirty years!

The Schoolmaser well recalls a story of that period that may be of some interest to the class—a story concerning his father. The latter at that time was "in the harness," conducting a successful plumbing business in Worcester, Mass. Two brothers were working for him as apprentices and in due time they "went up" before the local examining board for their journeyman's license. Both boys failed to pass. Their failure was in the theoretical knowledge of plumbing, and their employer set diligently about the task of putting his two boys in proper shape to pass the next examination, which came six months later. With characteristic foresight he laid definite plans for the accomplishment of this purpose. There was almost nothing published on the subject of plumbing those days, and the few books that were available were antiquated and largely devoted to English practice, which in many essentials was greatly different from American practice. His only recourse was the accumulation personally of material with which to give the two boys the instruction necessary to pass the examination. This was done in a thorough manner, but of course at the expense of much time and thought, and with the result that the examination was passed by both boys.

To new members of the Class, it should be explained that the Plumbing Problems are published on alternate weeks in "Domestic Engineering." Readers send in their solutions. The solutions sent in over a period of four or five weeks are then commented upon in a "Schoolmaster" article. This is a "Schoolmaster" article.

An interesting sidelight on this story is the fact that the information thus accumulated became the nucleus of what has since become the Starbuck line of publications on plumbing.

The real point that we are trying to bring out, however, is the comparison between the present day and the period twenty-five to thirty years back, in the matter of opportunity for education. As we have already stated, thirty years ago there was mighty little published information to be had,—whereas now there is no limit, we might say, to the information available.

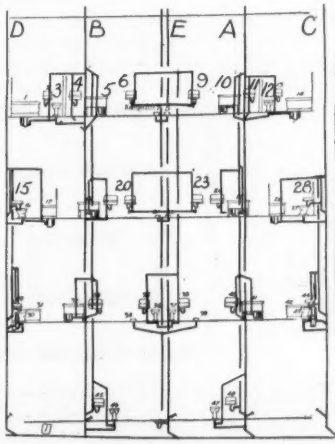


Fig. 1

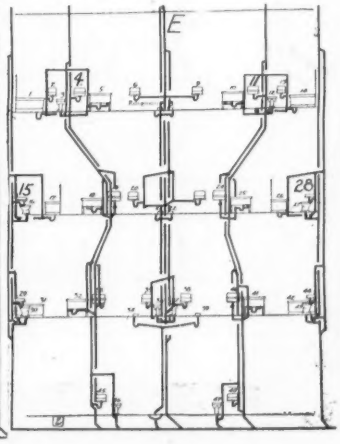
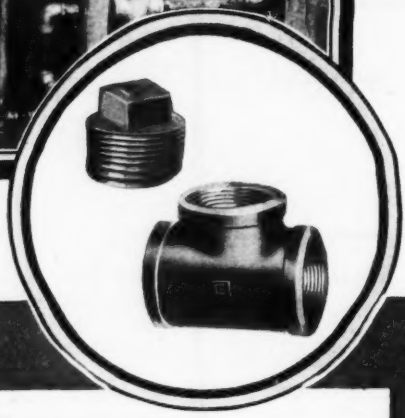


Fig. 2

A few of the typical Square "Gee" fittin's used on the above installation.



Success builds Success

THAT'S why "up-and-coming" plumbers the country over are using successful fittin's — Square "Gee's." Special tapping machines, careful finishing processes, smooth countersinking and rigid inspection insure behind-the-scenes performance of *keeping* a good plumbing job *always good.*

Square "Gee's" ability to "come easy and fit tight" *the first time* is a guarantee to you of tight, leak-proof connections, lower time and labor costs and greater profits.

The clean-cut threads of Square "Gee's" eliminate all the cussin' and wrasslin' with balky connections for the boys on the job and aid them in making complaint-proof installations.

Tell your jobber's salesman you want success builders — Square "Gee's" — on your next fittin' order.

THE GRABLER MANUFACTURING COMPANY · *Cleveland, Ohio*
New York · Chicago · San Francisco · Los Angeles

SQUARE
Malleable Iron

"GEE"
PipeFITTINGS

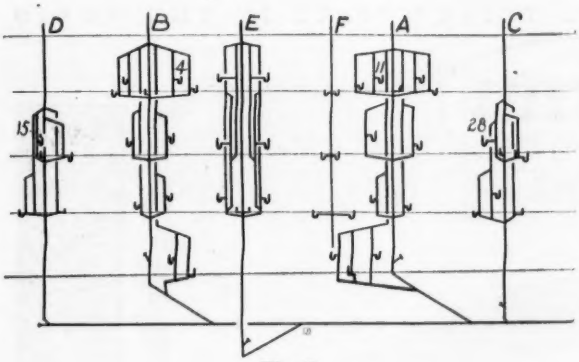


Fig. 3

"Domestic Engineering" receives numerous letters attesting to the great value of this kind of instruction in drawing. The trade is urged for its own benefit to take up this study.

The thing that concerns us, however, is that the work may be made to do good to a constantly increasing number, and this we have constantly before us as the chief reason for conducting this work.

In the Feb. 19 issue, on pages 26 and 27, we presented another plumbing problem based on a set of building plans, and the following were first to respond with elevations showing the plumbing system required:

Every reader of this article is urged to send in suggestions for the improvement of this method of giving plumbing instruction.

Fig. 1.—B. C. McCartney, Wichita, Kans.
Fig. 2.—Robert Campbell, Pueblo, Colo.
Fig. 3.—E. G. Reasoner, Oakland, Calif.
Fig. 4.—A. T. Welsh, Eau Claire, Wis.
Fig. 5.—John C. Wilson, San Bernardino, Calif.
Fig. 6.—F. R. Warren, Chattanooga, Tenn.
Fig. 7.—H. A. Fitzgerald, Lawrence, Mass.
Fig. 8.—Wm. M. Glose, Jr., Allentown, Pa.
Fig. 9.—Wm. DeRonde, Paterson, N. J.
Fig. 10.—H. T. Callan, Pittsfield, Mass.
Fig. 11.—H. W. Behler, York, Pa.

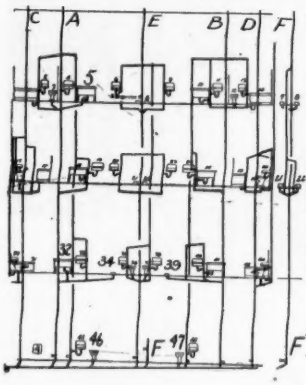


Fig. 4

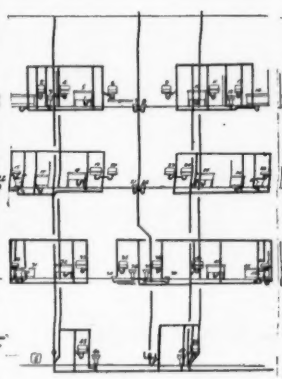


Fig. 5

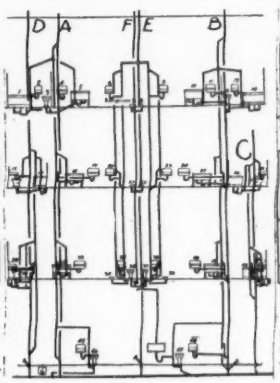


Fig. 6

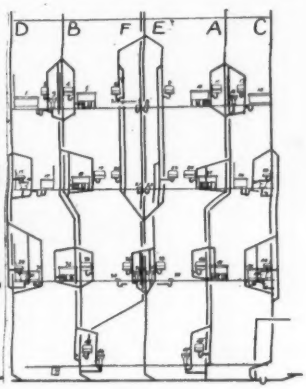


Fig. 7

AND right here we want to emphasize the big opportunity that "Domestic Engineering" is offering in an educational way, in the field that is covered by the Schoolmaster series. Right here lies the greatest educational opportunity that the plumbing trade of today knows anything about, and the hundreds of men who are following this line of work are proving the statement.

We have before us a communication suggesting that mathematical problems relating to the trade be undertaken, and we expect to adopt the suggestion a little later. We might tell you of other suggestions that are under consideration.

Fig. 12.—D. B. Biggs, Santa Ana, Calif.
Fig. 13.—Robert T. Harris, Milliken, Colo.
Fig. 14.—Charles Blaeser, College Point, N. Y.
Fig. 15.—Albert Russ, Bethany, Mo.
Fig. 16.—John Cersosimo, Concord Junction, Mass.
Fig. 17.—J. B. Bush, Providence, R. I.
Fig. 18.—"J. R. P.," Groton, Conn.
Fig. 19.—Louis Liess, Union City, N. J.
Fig. 20.—R. Padula, Albany, N. Y.
Fig. 21.—D. L. Butler, Blackfoot, Idaho.
Fig. 22.—James H. Williams, McKeesport, Pa.
Fig. 23.—H. W. Behler, York, Pa.
Fig. 24.—Frank Wantroba, Ansonia, Conn.
Fig. 25.—Frank Wantroba, Ansonia, Conn.
Fig. 26.—Frank Wantroba, Ansonia, Conn.

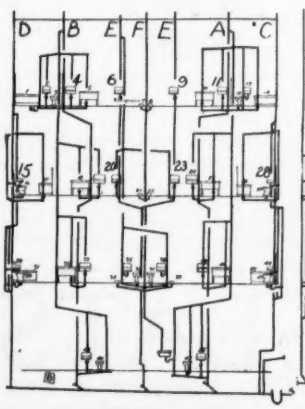


Fig. 8

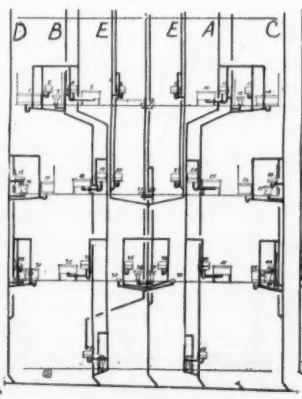


Fig. 9

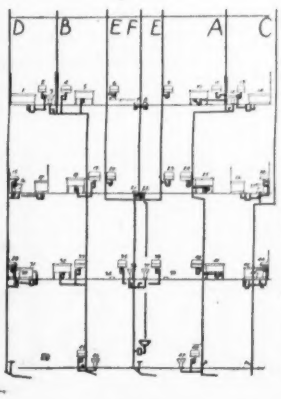


Fig. 10

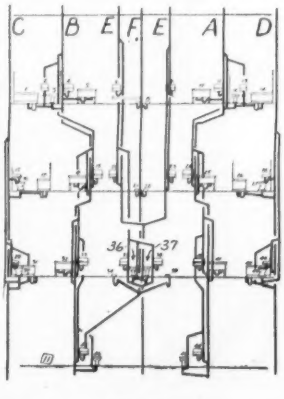


Fig. 11

THE LARGEST MANUFACTURERS OF TOILET SEATS IN THE WORLD

Never-Split
Evernu
Everlasting Hard Rubber
Seats

No. 580

Unconditionally Guaranteed

There Can Be
No Other Exactly Like It

Evernu construction is patented. Many features that add greatly to the excellence and economy of these beautiful toilet seats are found *only* in Evernu Hard Rubber Seats. They are essentially different from any other on the market — and they always will be.

The exclusive features of Evernu Seats enable them to preserve their original glossy beauty through years and years of severest usage. That is the reason plumbers everywhere find a constantly growing, profitable demand for Evernu, for fine homes, apartments, hotels, hospitals, schools, and other buildings.

Prominent buildings completely equipped with* Evernu, *include:

Equitable Life Insurance Bldg., New York
Russ Bldg., San Francisco
Barlum Hotel, Detroit
Union Station, Chicago
Bellevue Hospital, New York
Public Schools— New York, Chicago and other leading cities

Evernu Seats are molded of special hard rubber into seamless, jointless, everlasting units. The hollow centers give unusual lightness and great strength. Jet black or mahogany. Models for every type of bowl. *Unconditionally guaranteed.* Register your name with us so we may refer inquiries from our National Advertising to you, and supply catalogs, prices and trade-building service on the Never-Split Complete Line.

NEVER SPLIT SEAT COMPANY
Founded 1905
DEPT. 27 EVANSVILLE, INDIANA, U. S. A.

For De Luxe installations use Never-Split *Perma-White* and *Coloro* Seats, covered with extra-heavy, reinforced sheet pyralin — *Perma-White* in glistening white — *Coloro* in pastel blues, greens, yellows and brighter shades. Will not stain, crack, peel, or fade.

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"Perma-White" Sheet Pyralin | **"Coloro" Tinted Sheet Pyralin** | **"Evernu" Hard Rubber** | **White "Duco" Sprayed Pyralin** | **Varnished Wood Patented Construction**

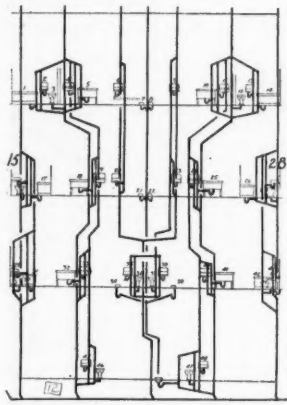


Fig. 12

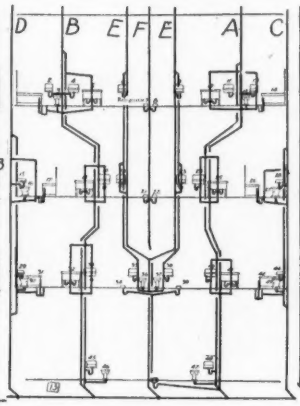


Fig. 13

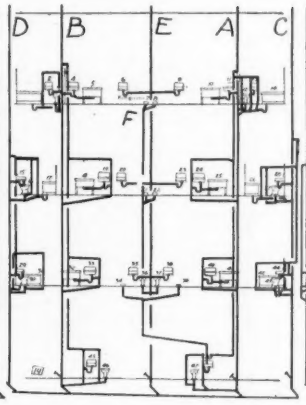


Fig. 14

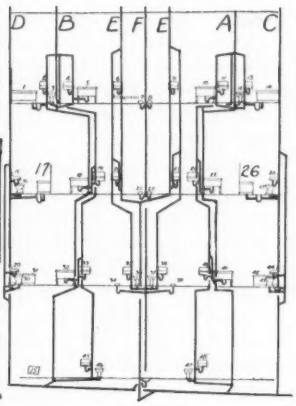


Fig. 15

Fig. 27.—Robert Graham, Jr., West Warwick, R. I.
Fig. 28.—B. M. Mangan, Los Angeles, Calif.
Fig. 29.—Geo. E. Hardin, Humboldt, Kans.
Fig. 30.—Charles Musselman, San Francisco, Calif.
Fig. 31.—R. A. Coen, Pennington Gap, Va.
Fig. 32.—R. Zimmer, Bronx, N. Y.

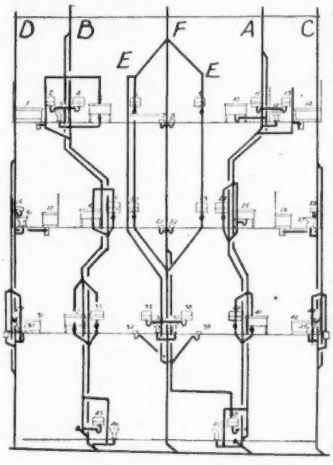


Fig. 16

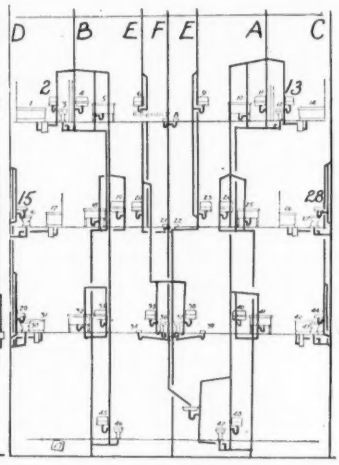


Fig. 17

Join the Class now. All that is necessary is to send in a solution of a Plumbing Problem.

Discussion of the drawings is as follows:

Fig. 1—A note accompanying this drawing reads as follows: "Not knowing whether or not the stacks are to offset, I have drawn them straight, and let them come where convenient."

We are glad that this statement has been made, as it makes a good introduction to the chief feature of the problem we are considering.

If the problem is worked out properly, the stacks would have to be shown in the plumbing elevation just exactly as the floor and basement plans show them. The plans show clearly that stacks A and B each have two offsets, these coming between the first and second floors and between the second and third floors. Several of the elevations show these offsets correctly made, and as Fig. 19 is one of these, we are going to refer to it as our example.

As a matter of fact, there would be no use in showing any elevation of the work whatever, unless it were to show the work correctly—that is, in agreement with the plans. It goes without question that it is always best to run a stack straight up, without offsets, but in this case the plans show these offsets distinctly, and they must therefore appear in the elevation. If you were actually installing this work, and saw that the plans called for one or more offsets that were apparently unnecessary, you would naturally take the matter up with the architect before going ahead. In this case, however, the offsets are shown on the plans in order to provide experience in the reading of plans.

Please write on your solution, the date of the issue in which the problem appeared.

Stack E also is shown differently than called for on the plans. Fig. 19 shows this part of the work as the plans intended. Reference to the second and third floor plans will show that it would not be practicable to connect 6, 9, 20 and 23 as shown in Fig. 1. The plans show stack B passing between 3 and 4 and stack A between 11 and 12, whereas in this elevation they are between 4 and 5 and between 10 and 11, respectively.

Several connections are made with the heel of a closet bend, which is not good practice; 4, 5, 10, 11, 15 and 28 should be stack-vented, in which case they would not need any other vent. Drum traps appear to have crown vents. Refrigerators should be trapped.

Fig. 2—This drawing is very well done; about the only criticism we have to make concerns stack E, and the same criticism as made on Fig. 1 applies here.

Fig. 3—No offsets are shown on stacks A and B. Ref-

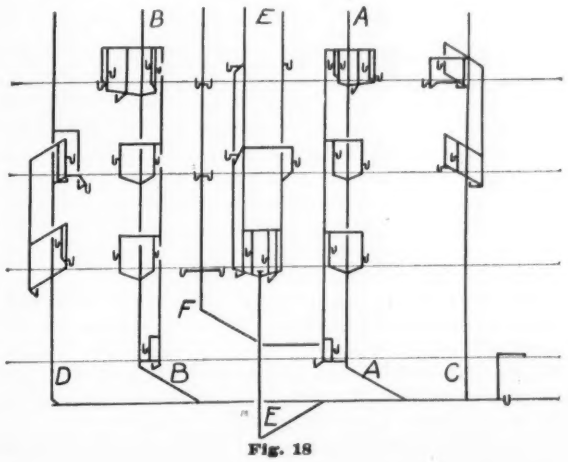


Fig. 18

erence to first floor plan will show that stack E does not divide until it gets above the first floor. Too much vertical venting is used; it is better to use just one main vent line for each soil stack; 4, 11, 15 and 28 should be stack vented to save expense.

Class members are requested to send in their photographs for publication. Photos and halftones are returned to them as soon as used.

Fig. 4—No offsets are shown. The criticism given under Fig. 1 applies here, concerning stacks A, B and E. The refrigerators require no venting. Refrigerators 34 and 39 are connected into the drainage system direct; 5, 32, 46 and 47 should be vented.

Fig. 5—Evidently the nature of the problem has been misunderstood. The skeleton elevation showing the fixtures was to be used in conjunction with the floor plans, but Fig. 5 shows the fixtures connected regardless of the floor and basement plans, just as we used to do in the case of problems where no floor plans were given. A study of some of the correct elevations will show how the elevation should be worked out, and next time we are sure the problem wil be worked out in first-class shape. Fig. 5 shows a thorough understanding of plumbing connections.

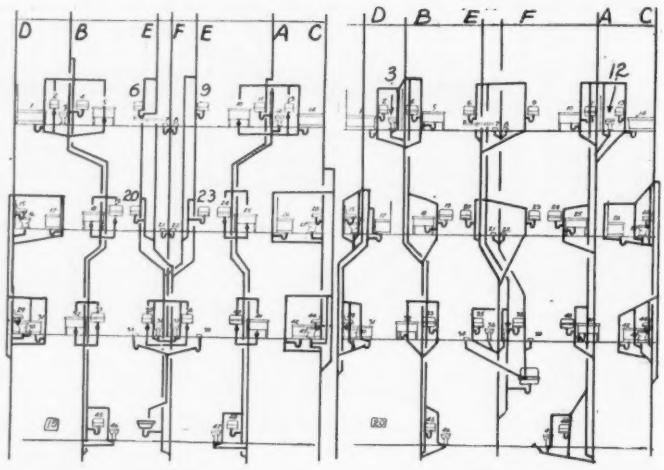


Fig. 19 Fig. 20

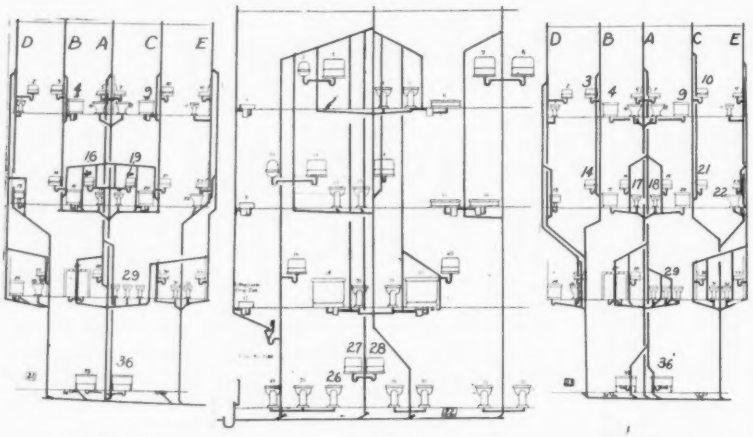


Fig. 21 Fig. 22 Fig. 23

All that is necessary in order to become a member of this world-wide plumbing class is to send in a solution of a plumbing problem. They are published regularly in "Domestic Engineering."

Fig. 6—No offsets are shown on stacks A and B, and reference to our criticism under Fig. 1 concerning these stacks and E will help to give a better understanding of plan reading and of this special problem. Stack E does not divide at the first floor, as this drawing shows, and the stack does not continue straight up through the roof. Fig. 19 will show the correct method of piping according to the plans. Traps should be shown under the refrigerators. Crown vents are shown on several fixtures; 15 should be stack-vented.

Fig. 7—This is a very well executed piece of work, and there is only one criticism that we have to make. There is only one offset on stacks A and B, whereas there should be two. The offsets that are shown should point in the opposite direction. Correct work on the offsets will be found in Figs. 2, 8, 11 and others.

Fig. 8—The running of stacks A, B and E, which is the chief feature of this problem, is correctly done. Vent stacks for A and B are run differently than most of the drawings show, but in the absence of vent stack locations on the plans, we believe the method used is justified. Connections for 6, 9, 20 and 23 are made to better advantage in Fig. 7. Reference to the plans will show that the venting of 23 is not very practicable; 4, 11, 15 and 28 are close to their stacks and should therefore be stack-vented.

Every plumbing drawing sent in must be redrawn in India ink by a "Domestic Engineering" draftsman for reproduction. Class members can help to eliminate mistakes by being careful with their drawings.

Fig. 9—This elevation shows a fourth floor, whereas the plans show only three floors. Stacks C and D show offsets which the plans do not call for. Stacks A and B show only one offset each, whereas there are two on each, as shown in several of the drawings. Each refrigerator should be trapped, and the stack should pass through the roof. The plans show stack E dividing at the second floor, whereas this elevation shows it dividing and also passing straight up through the roof. Fig. 19 shows the correct connections. Bathtubs appear to be crown-vented and sink and washtrays are served by a single trap, whereas the best method is unquestionably to trap each fixture separately.

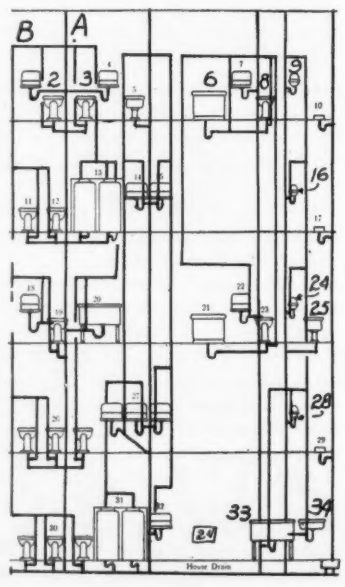


Fig. 24

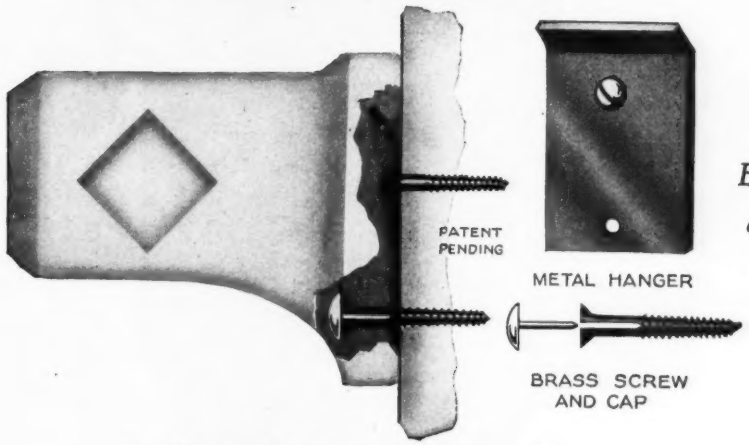
Fig. 10—In the city from which this

Announcing

HUGHES Sta-on

DISTINCTIVE BATHROOM FIXTURES

Hangs firmly rigid, can't fall off



Easily hung and easily removed

Combining principles of construction, distinguished beauty of designs, with a character of quality, entirely new among portable type fixtures.

Sta-on

An adaptation of the wall hanger principle used for hanging heavy plumbing fixtures. Simply fasten hanger to wall—hang fixture, level, insert bottom screw and cap.

To remove simply reverse this procedure.

Can be hung as quickly and as easily as any fixture and when in place will hang firmly rigid, permanently or it can be taken down with equal ease.

Simplicity
Permanence — Portability
Interchangeable

The hanger being metal—no excess "play" is needed for expansion or swelling—hence danger of china breakage from this cause is eliminated—and perfection of fit between china and hanger assures

Firm rigidity and freedom from rocking, looseness or liability of being accidentally "knocked" off.

Only one size hanger used—fits all pieces, and it is everlasting and not affected by moisture.

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W. R. HUGHES CORPORATION
TRENTON, N. J.
Makers of TILE-IN *the Pioneer Line of All Tiled in China Accessories*

W. R. HUGHES CORPORATION, Trenton, N. J.

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Designed for residential and industrial use, with capacities in Steam from 400 to 12,000 square feet, and in Water from 650 to 19,500 square feet of radiation.

Your Original Profit Stays Put!

The most disheartening thing about the installation of some types of heating plants, is the expense of looking after the plants after they have been installed—of keeping them in good working order. What appeared to be a good profit in the beginning dwindles down to nothing before you are through.

When you sell and install a Gas-Era Gas-Fired Boiler *your original profit stays put!* Extreme simplicity of design, tamper-proof, sturdy construction, a total absence of moving parts, and completely automatic operation are factors that keep the user happy and save your profit.

You should investigate Gas-Era Gas-Fired Boilers!

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drawing comes, anti-siphon traps are used without vents almost exclusively. Stack B should show a second offset between the first and second floors. Stack C has no offset, according to the plans.

Fig. 11—The layout of this elevation is first class, showing a correct reading of the plans. We note waste connections into the heel of closet bends, which is poor practice. The vents of 36 and 37 should not connect together below the top of the fixtures; when so connected waste will run through the vent connections.

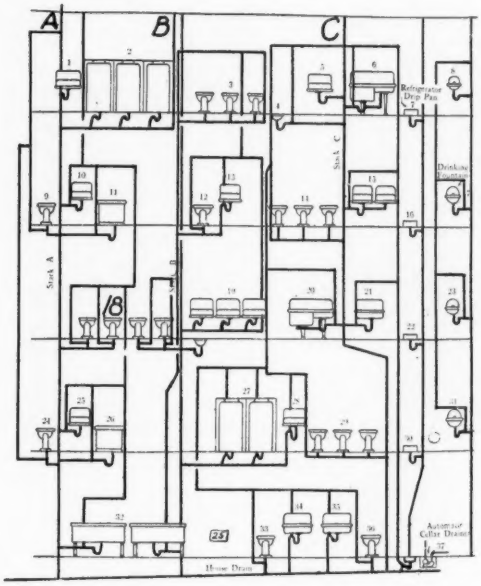


Fig. 25

Fig. 12—The stacks are correctly run, showing a clear understanding of the plans. Some of the top floor fixtures, also 15 and 28, could well be stack-vented.

Fig. 13.—There is practically no criticism to be made of this drawing, which is another way of saying that it correctly represents the work called for on the plans. Laundry tubs seldom are served by more than one trap.

Fig. 14.—All fixtures appear to be connected to the proper stacks, but in each instance the stack is shown running straight up, whereas A, B and E each have offsets. Much of the criticism of Fig. 1 applies here. The refrigerators should be trapped and their stack should pass through the roof. All laundry tubs should be separately trapped. Stack E divides below the second floor, and instead of continuing straight up as here shown, two stacks branch off. The bathtubs appear to have crown vents.

Fig. 15.—Stacks A and B have only two offsets instead of three as here shown. The offsets in the basement are not called for according to the plans. The venting for stack E could be improved by adopting the method shown in Fig. 11. Some of the top floor fixtures might be stack-vented. 17 and 26 if connected into the stack above the water closet connection would be less in danger of siphonic influence.

Fig. 16.—This is another drawing that shows a correct reading of the plans, also a clear understanding of plumbing practice. There is no criticism.

Fig. 17.—This is a very creditable drawing, showing a thorough understanding of the plans. The vent stacks A and B run up straight instead of following the soil stack as in the case of most of the drawings, but in the absence of locations of vent stacks on the plans, this method is justified. 2, 13, 15 and 28 might be stack-vented.

Fig. 18.—While the fixtures are connected into the proper stacks, the latter in each case run straight up, whereas A and B should have two offsets each. Stack E should not divide until some point between the first and second floors is reached.

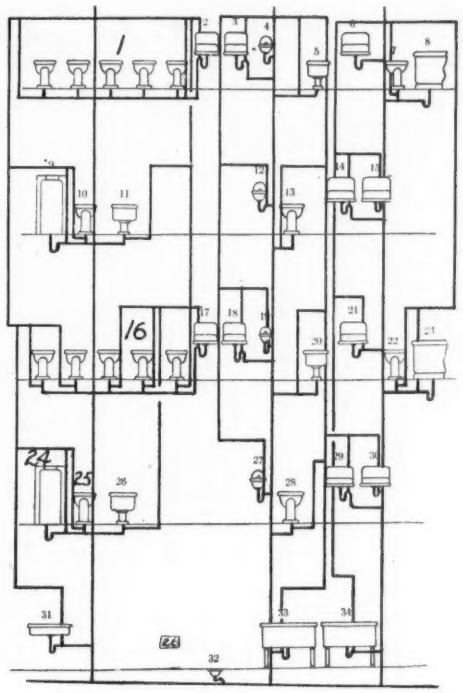


Fig. 26

Fig. 19.—A very well made elevation. Our only criticism is that the venting of 6, 9, 20 and 23 could be simplified by the method shown in Fig. 17.

Fig. 20.—Stack D has no offset according to the plans. Stack B should have two offsets instead of one. Stack A should have two offsets. The plans show stack E dividing below the second floor, and running from that point in two separate lines. 3 and 12 require no vent.

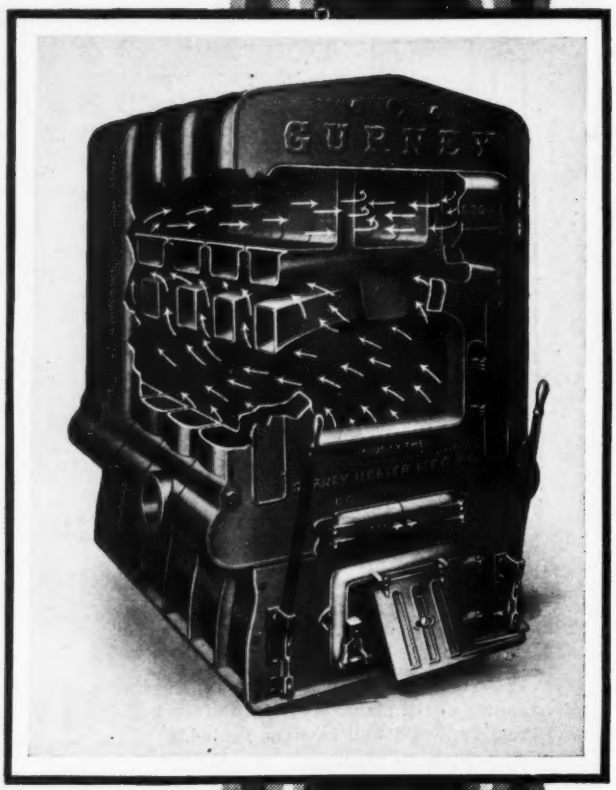
Fig. 21.—This problem is that of January 8, and is well handled. Stack E has a second offset between the second and third floors, which cannot be shown on this elevation. It could be shown in a side elevation, but that would not allow the offset here shown to appear. The only answer to such a situation as this is an isometric elevation. 4 and 9 may be stack-vented. 16 and 19 should have continuous vents. The circuit vent of 29 is carried into stack E vent, but this would not be practical, as the two are in different parts of the building. Traps for 36 should not be below the cellar bottom.

Fig. 22.—This drawing refers to the plumbing problem of June 26, 1926. The fresh air inlet should not connect directly into the trap, but to a fitting just inside the trap. There are too many main vertical vent lines. Three or four of these lines serve fixtures that should be served by one line. The vent for 27 and 28 should not pass up through the entire house, but should enter a main vent at the nearest point. The baths have crown vents. 26 is not well vented.

Fig. 23.—This is another drawing of the January 8th problem. When 3 and 14 are connected into stack D and

(Continued on Page 63)

Gurney



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The Gurney "900" series Boilers are especially suited to fill requirements where head room is limited. Designed with a low water line they are ideal for this purpose and make a very practical installation.

One glance at the illustration will convince you of the exceptionally long flue travel which is further increased by special additional prime heating surfaces.

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Advertising Editorial

A NEW ONE EVERY WEEK—No. 278

Sewage Disposal

—A matter of vital importance in summer or outlying homes

FOR THE SAKE of the family's health, be sure that the sewage disposal methods of the summer "cottage" hold no danger of disease. The outlying home, too—beyond the city mains—ought to be protected by proper methods of disposal. We are expert in the installation of septic tanks. Don't take a chance. Let us confer with you and see that there is no danger that the air or water supply may become contaminated. Just telephone.

(In this space your Name,
Telephone, and
Address)

A BATH A DAY KEEPS YOU FIT EVERY WAY

Ask for a complimentary copy of "The Story of the Bath." Good summer reading. Children will enjoy it. It isn't advertising.

"Wear and Tear"

THERE'S a certain wear and tear in business that must be taken care of. Neighborhoods change their character. Whole districts, in the course of years, show the changes of times. As people with whom the retailer deals move away, and new ones take their places, the retailer must inform those newcomers of his service, of his location. That's why consistent advertising is necessary—to make up the wear and tear on the customers of a business by bringing in new ones. Use the Advertising Editorials. Only $4.20 for twelve illustrations. We send the illustration and a proof of this page each week. You hand reprint and cut to your newspaper.

SALES LETTER

One a Week—No. 115

Now that people are thinking of going away it is a good time to call attention to sewage disposal methods. Send the following letter.

JOHN BROWN
Plumbing : Heating

Two Rivers, N. Y.,
July 23, 1927.

Mr. Edward Jones,
Two Rivers, N. Y.

Dear Sir:

If your family is going away for the summer, it would be well to make certain that the summer cottage is well protected. Modern sewage disposal methods make it possible for the isolated home, whether it be on the shore of some lake, or merely outside the limits of the city mains, to enjoy the same sanitary disposal of sewage.

We are experts in the installation of septic tanks. We urge most strongly that you give this matter serious consideration. Don't take the chance that either the air or the water supply will become contaminated. Lack of attention to these matters may bring serious consequences. Dysentery and typhoid are only two of the terrors which stalk in the unprotected water supply.

The septic tank installation furnishes practical and efficient protection in the disposal of the household wastes.

Just telephone and we'll be glad to send a competent man to discuss the problem with you without obligation on your part.

Very truly yours,
JOHN BROWN.

Adlet

ONE A WEEK—No. 136

A NUMBER of plumbing and heating contractors have found that very small advertisements in the classified columns of the newspapers bring in business. So there is no question of the effectiveness of good advertising, regardless of size. If you can't afford to use the Advertising Editorial, use the Adlet, below. It is only an inch in depth. It will be inexpensive. Copy it out and hand it to your local newspaper, adding your name, address and telephone, and instruct them to run it for a week. Each week you will find a new one in the same place. Start now.

Pure Water

Be sure that the water supply for the summer cottage is pure—the safest method is to install a septic tank so that water cannot become contaminated by household wastes.

How Important is the Lavatory?

[One way to learn that is to shut off the water from it for a few days]

THE LAVATORY is used first thing in the morning and last thing at night.

It is used every time any member of the family wants to wash face or hands.

It is seen by a great share of the family's guests —by all who remain for more than a few hours.

It is an obvious index to the housekeeping standards of the home.

The lavatory, in short, has an importance in the household far beyond that of any other piece of household equipment of comparable cost.

For that reason, quality in the lavatory takes on special significance.

The cost to the consumer of a Madbury Lavatory of Durock is only about $10 more than the cost of pedestal-base lavatory of coated iron.

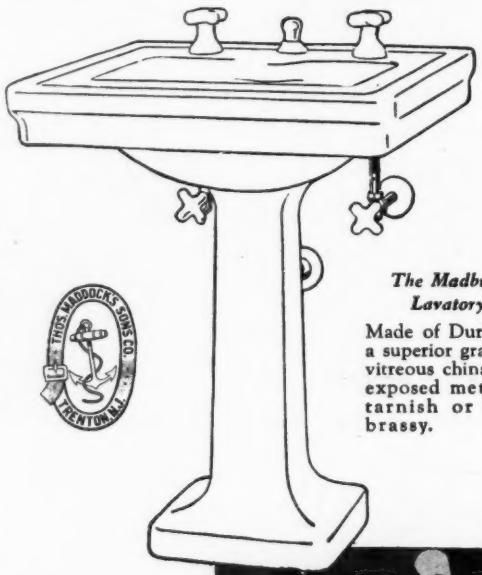
Yet the former means permanent satisfaction, unchangeable beauty, laborless maintenance, constant pride.

And the latter means eventual dissatisfaction, chipping and discoloration, endless scrubbing and scouring, apologies and embarrassment.

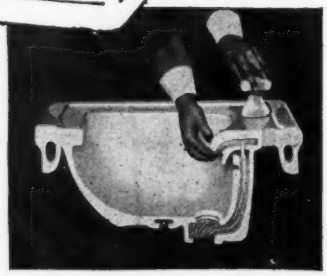
These being the facts, to recommend the installation of a Madbury Lavatory of Durock is to add to the customer's satisfaction and so, to the contracting plumber's success.

We have prepared for you a selling plan, which has already brought business for many plumbers. The coupon below will bring *your* copy.

THOMAS MADDOCK'S SONS COMPANY
Oldest Sanitary Potters in America
Trenton, New Jersey



The Madbury Lavatory
Made of Durock—a superior grade of vitreous china. No exposed metal to tarnish or wear brassy.



The overflow of a lavatory is the only hidden part. Consequently, it is the lodging place for filth and disease germs. The Madbury is the only lavatory made having an overflow which can be cleaned. To thoroughly cleanse the overflow of the Madbury it is only necessary to place a finger over the supply nozzle and turn on the valves. The water is thus forced through the overflow, under pressure, removing any germ-breeding accumulation of soil.

MADDOCK
DUROCK Bathroom Equipment

THOMAS MADDOCK'S SONS CO., Trenton, N. J. Date.....

This booklet, "The Two Vitally Important Fixtures in the Bathroom", also illustrated letter, will help you tell your prospects about the Madbury and other Durock Fixtures. Attach this coupon to your letter or bill head and mail to us for copies.

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Street Address..... City..... State.....

QUESTIONS

ASKED BY OUR READERS AND ANSWERED BY OUR EXPERTS

The Questions and Answers Department is open to all readers. Here their questions are answered—their problems solved. And, what is more, this department is an open forum, where readers may discuss plumbing and heating subjects. Don't hesitate to ask questions about the things you want to know, and don't fail to send in your comments and criticisms of questions that have been answered. While all questions are answered by men who are expert in their particular lines, your experiences may help a fellow craftsman who is in need of information. This department is for the craft. Use it freely. There are many ways to untie knotty problems.

METHOD OF TINNING BRASS PIPE

Editor, "Domestic Engineering":—Have you a formula for tinning brass pipe and brass fittings? I have a number of large brass castings which I would like to tin myself, and I would like to get a formula for a bath in which to submerge the fittings, so the tin will be clean, and to make it stick to the fittings. I would appreciate any help you can give me in this matter.

Missouri. W. C. K.

We are told that solder nipples and similar brass fittings must be well tinned before they can be properly wiped or soldered to lead, and the object of tinning is to prepare the surface of the metal so that the brass will readily unite with the solder when the solder is fused or melted on. A thin layer of solder is the best. Flow the solder on with a hot iron.

The surface of the metal must not be touched after filing as this tarnishes the filed surface so that solder will not adhere. Brass contains zinc, which is harmful to wiping solder; therefore, dipping brass fittings in solder spoils the solder by fouling it with zinc. If it is desired to coat brass fittings in much the same manner as a range boiler is coated, the zinc formula could be obtained from some concern doing this work.

CONNECTIONS ON HOT WATER BOILER FOR DOMESTIC USE

Editor, "Domestic Engineering":—Fig. 1 shows the connections on a hot water boiler for domestic use. Please advise me if these connections are correct. The boiler is located in the cellar.

Pennsylvania. C. H.

The connections as shown in Fig. 1 should be satisfactory. Our only suggestion would be that, if there are two openings at the top of the tank, the cold water supply connection be made through one of these openings, as shown in Fig. 2.

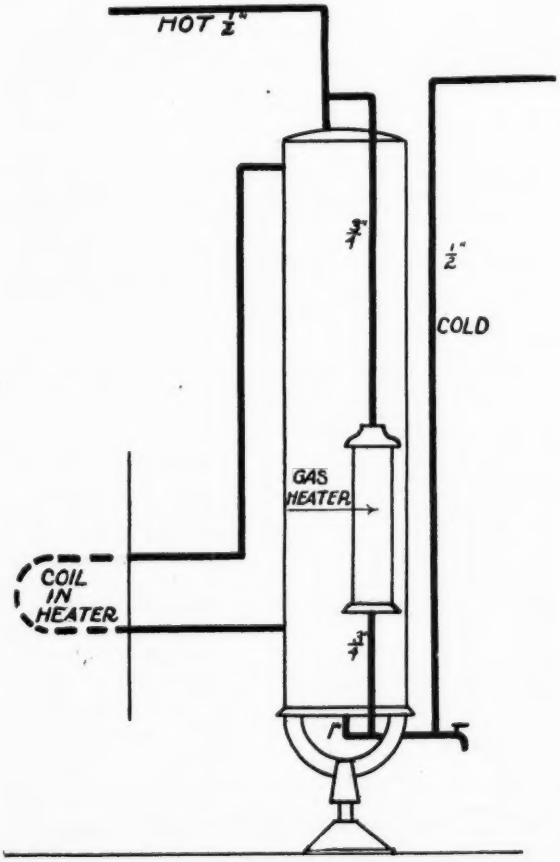


Fig. 1

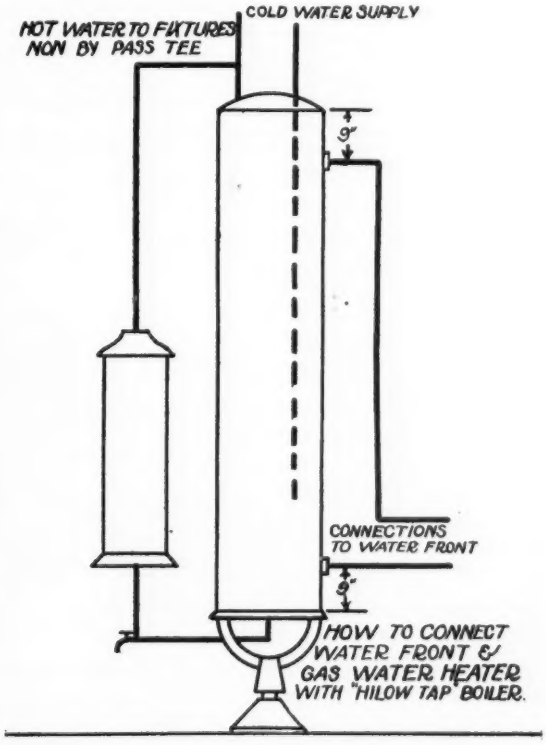

HOT WATER TO FIXTURES NON BY PASS TEE
COLD WATER SUPPLY
9"
CONNECTIONS TO WATER FRONT
9"
HOW TO CONNECT WATER FRONT & GAS WATER HEATER WITH "HILOW TAP" BOILER.

Fig. 2

The Round Table takes up a new

HEATING PROBLEM

Each member of the Round Table is asked to send in a solution of the problem shown here. Send the solution to "Domestic Engineering" and it will be analyzed by the Round Table Chairman and discussed by him in a Round Table article a few weeks later

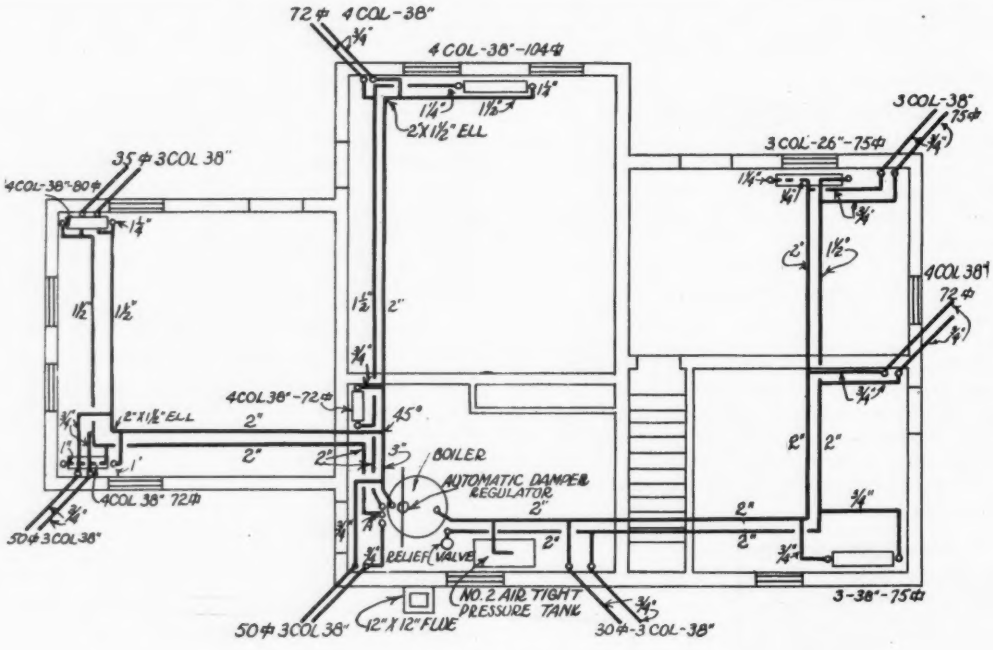


Fig. 1

MANY letters are being received from our Round Table members and students of our heating problems, asking for more of these practical heating problems and solutions of trouble jobs. So your chairman here presents one that has been described as a "humdinger," — one that has puzzled many of our best men, but a problem easy to solve if you look at it in the right light and study it carefully before jumping at conclusions.

This job, the layout of which is presented in Fig. 1, is a closed hot water heating system with expansion tank in the basement. It was installed in a two-story residence. The radiation of the first floor is shown, also the risers to the second floor. At the end of these risers the square feet of radiation carried is plainly marked. The main line pipe sizes are given in Fig. 1, also sizes of the branches leading from the main to the radiators and the sizes of the risers and return lines.

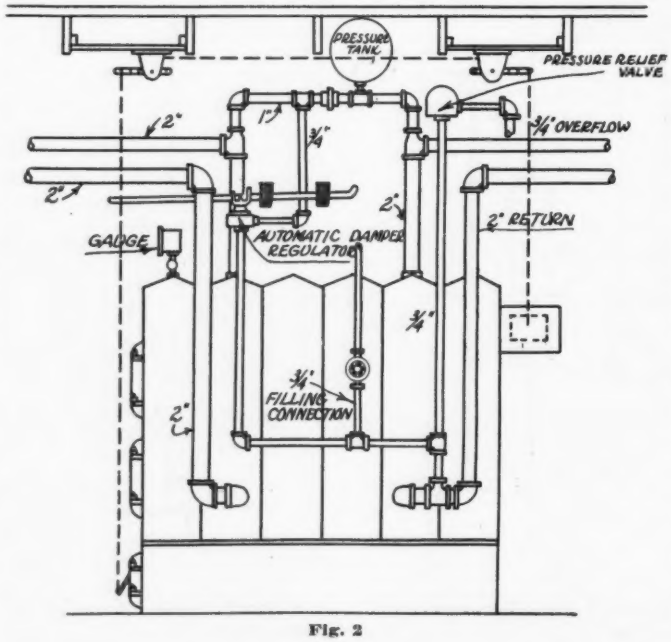
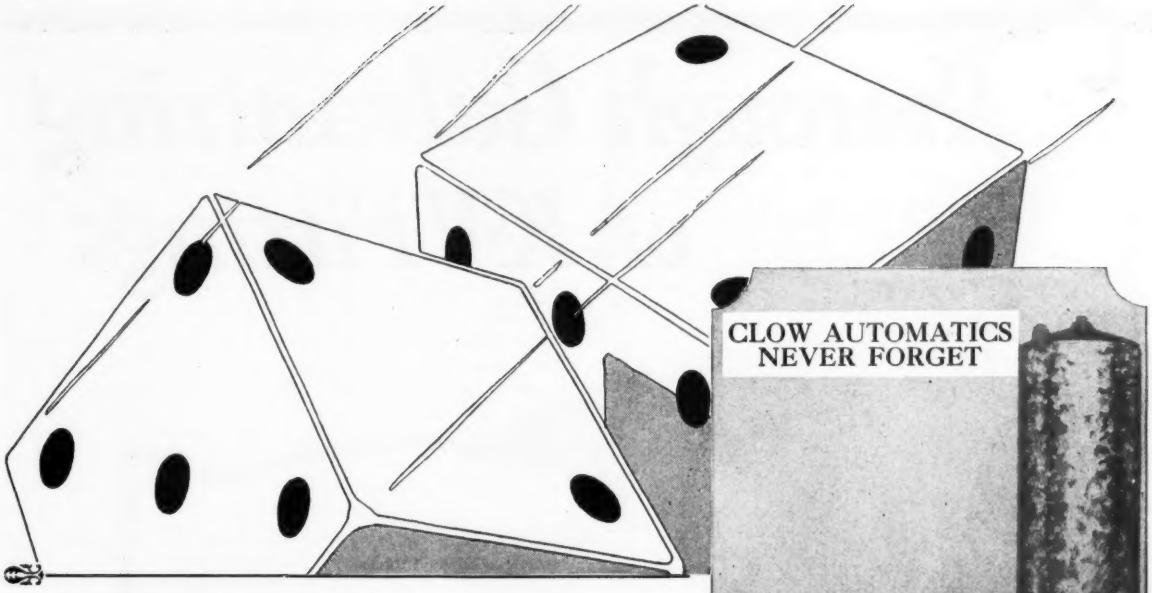


Fig. 2

Fig. 2 shows the boiler connection, the closed tank of the hot water heating system —the automatic damper regulator, the main line connections to boiler, and the pressure relief valve as well as the filling connection. The 2-inch return line to the boiler is shown on the right hand side and the Round Table members will note that the pressure relief valve is connected to this line.

Any closed hot water heating system with a tank in the basement must have a pressure relief valve set to operate at approximately 8 to 15 pound pressure above the static head.



REMOVE THE GAMBLE
from school sanitation— in the schools you design

THE water closet is most important in school sanitation. Left unflushed — as can often happen in a school — it becomes a menace to health. And school children's health is too precious to gamble.

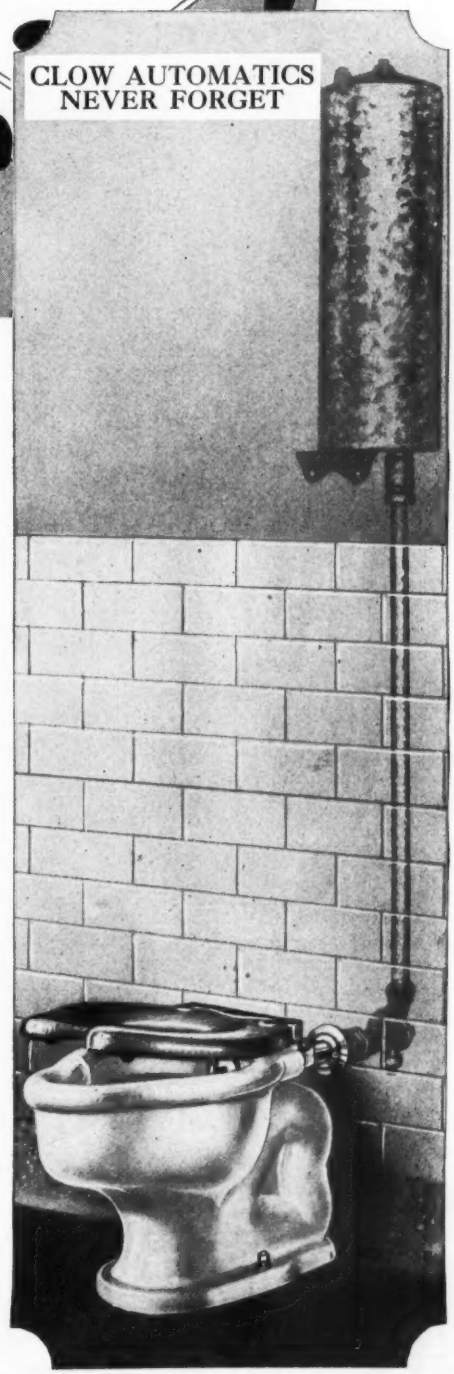
With the Clow Automatic Closet, there can be no doubt of complete sanitation in the school. After every use, it flushes automatically — scouring its bowl from rim to trap with a fast, high pressure flush.

The Clow-Madden Valve — with but two moving parts— has no intricate valves and floats to wear out and waste water. It has no handles or chains to be broken or removed.

Clow Automatics assure sanitation for the next quarter century and longer. In that time, they ask little for repairs —as actual performance records show.

Send for our school plumbing catalogue, showing these automatic closets.

JAMES B. CLOW & SONS
201-299 N. Talman Ave.
Chicago



The Clow Automatic Closet. One of the forty-eight styles, heights and types. The tank extends and is concealed behind the back wall in a utility corridor.

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AUTOMATIC CLOSET

Forty-Eight Styles, Heights and Types to Meet Your Requirements

Thorough Galvanizing on K-V Fittings

EXAMINE the galvanizing of a K-V Malleable Iron Fitting as closely as you will, you'll never find the slightest bit of surface inside or outside that is not generously and uniformly coated.

The excellence of their galvanizing is only one of the good features of K-V Malleable Iron Fittings. Their generous chamfer, clean, sharp, accurate threads, and truly malleable metal are all big factors in helping your fitters make quick, permanently tight, trouble-free, profitable piping jobs.

K-V Fittings are handled by dealers everywhere. Try some on your next job and you will soon see why plumbers and pipe-fitters all over the country have standardized on them.

THE KENNEDY VALVE MFG. CO. ELMIRA, N.Y.

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KENNEDY

VALVES-PIPE FITTINGS-FIRE HYDRANTS

On this particular job the ceiling height was 8 ft. 6 inches, and the static head, including the height of the radiators on the second floor and the height of the basement, amounted to 10 pounds. The pressure relief valve was set at 18 pounds. Hot water type radiators were used and all were connected on the bottom, both supply and return.

The entire heating job was installed in a first class manner and all pipes properly pitched. Some branch connections were taken off on a 45-degree angle on top of main, some on the side by means of proper size reducing tees as indicated in Fig. 1.

When the job was started everything seemed to work satisfactorily and after a few days the water was removed from the system and boiler and the entire system filled with fresh water. After this was done the boiler was fired up and everything seemed to work well. A few days later the owner called the heating contractor and complained that he could get no heat on the second floor, the radiators were warm only 12 to 14 inches from the bottom. Some of the second floor radiators were cold. The altitude gauge showed that the water had dropped 3 ft.

The heating contractor refilled the system to proper height and the second floor radiators heated satisfactorily. After a few days the same trouble occurred again, and the remedy was the same as before. This happened five times and the heating contractor was at a loss to understand the situation. A number of changes were suggested in the piping layout by an engineer called in to solve the problem. The heating contractor hesitated to make these changes because the heating system functioned properly until the system emptied itself. One thing he did. He examined and tested the relief valve and found that it operated freely and did not relieve the water until 18 pounds pressure was reached which was 8 pounds more than the static head.

What was wrong with this heating system?

What remedy would you suggest?

What changes should be made?

Why did the water leave the system, all valves being tight?

What happened to the top floor radiators?

Why did they fail to heat?

This is a very interesting problem and your chairman looks forward to many suggestions. Send your drawing and a letter explaining the situation as early as possible so that we can begin our discussion soon. Please remember it takes three to four weeks after all drawings are in for the answer to appear in "Domestic Engineering" so please be prompt. There are many problems waiting that will be of the utmost value to all and we would like to present them at an early date.

We will adjourn now and I hope that the class will respond freely and all try to solve this interesting problem.

The Round Table Chairman

Sandwich, Mass.—Boyden & Co., 14 Brattle Square, Boston, have been awarded the heating and plumbing contract for the new Henry T. Wing school. Dr. S. M. Beals, Jr., is the chairman.

Kenosha, Wis.—The Wenzel & Henoch Co., Milwaukee, has been awarded the heating and ventilating contract on a $217,000 school building, and Carl Riggins of Oconomowoc received the plumbing contract. John D. Chubb of Chicago is the architect.

Be Ready!

for the Fall Demand

for

HONEYWELL

Home owners today know the benefits and conveniences of automatic control. They are through with the discomforts of manual control. The real heating merchant can sell them Honeywell without difficulty if he will simply tell them about Honeywell — its time-tried and proven dependability; its simplicity; nothing to get out of order; no commutator; no armature; no windings; no trouble-breeders. ¶ Place your order now for Honeywell Controls and be ready for the fall demand. Don't wait for the first frost. If you do, your competitor will get the business. For if you have no stock on hand and are obliged to delay your prospective customers they will go elsewhere. ¶ Be ready! Wire or mail in your order today! Get your share of this business.

The leading manufacturers of heating boilers are today recommending Honeywell *exclusively. Of the important automatically controlled domestic oil burners a substantial majority is equipped with* Honeywell *controls.*

HONEYWELL HEATING SPECIALTIES CO.

WABASH
INDIANA

HONEYWELL

Temperature Regulators

ROYAL FLUSH VALVES

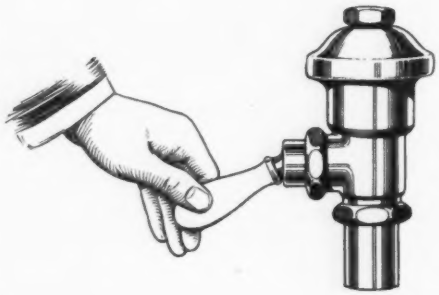
Dependability combined with Durability

WHEN YOU CONSIDER—

That Sloan Royal Flush Valves are built to stand the grind of constant use and to give years of efficient service

That they have stood the test of time, and have established a supremacy of flush valve performance that has no equal

you will easily understand why they are used by the majority of plumbing contractors throughout the country.



You Can't Change the Flush by Holding Down the Handle

Sloan Royal Flush Valves, from the moment the handle is pushed, work independently of the operator. They act with clock-like precision, and at every operation deliver a uniform flush which can not be increased by holding down the handle.

SLOAN VALVE COMPANY

CHICAGO

Albany, N. Y.	Butte, Mont.	Des Moines, Iowa	Jacksonville, Fla.	Milwaukee, Wis.	New York City, N. Y.	Seattle, Wash.
Atlanta, Ga.	Cincinnati, Ohio	Detroit, Mich.	Kansas City, Mo.	Minneapolis, Minn.	Oklahoma City, Okla.	St. Louis, Mo.
Baltimore, Md.	Cleveland, Ohio	Durham, Conn.	Los Angeles, Cal.	Nashville, Tenn.	Philadelphia, Pa.	Tampa, Fla.
Boston, Mass.	Dallas, Texas.	Fort Wayne, Ind.	Memphis, Tenn.	Newark, N. J.	Pittsburgh, Pa.	Washington, D. C.
Buffalo, N. Y.	Denver, Colo.	Indianapolis, Ind.	Miami, Fla.	New Orleans, La.	San Francisco, Cal.	Richmond, Va.

MARKETS

BUSINESS CONDITIONS IN LEADING JOBBING CENTERS

CHICAGO

Another fairly good week has just passed for manufacturers, wholesalers and contractors in this territory. Although activity does not seem to have assumed as heavy proportions at any time this year as during any corresponding period of last year, there has been a steady, almost uninterrupted flow of business that has kept all branches of the industry well occupied. While the volume of material being consumed is generally agreed to be slightly smaller than last year, manufacturers' shipping departments are none-the-less busy with the frequent small lot re-ordering of wholesalers, as they appear to be growing in favor as time passes. Manufacturers have prepared themselves for this condition by maintaining substantial stocks, and no exceptions were encountered during the week to the prompt delivery service that makers in general are offering. Contractors, also, are able to secure material for their ordinary requirements in quick time from wholesalers' stocks.

The soil pipe market appears to have stabilized itself after several weeks of price changing. On July 11 and 13 two other large foundries issued new sheets advancing prices 5 points, returning to the level that was the market from February, 1926, until June 22. Now, as far as can be learned, all makers, with the possible exception of one or two of the smaller ones, are at the same base. One other range boiler maker reduced prices during the week, placing his 30 and 40 gallon boilers at a level slightly above those of the makers whose reductions were announced last week and slightly lower on all other sizes.

The total volume of contracts let in Chicago in June amounted to $51,197,800, an increase of 66 per cent over May and 20 per cent over June of last year, according to F. W. Dodge Corp. An analysis of the June construction for Chicago shows that 60 per cent of all construction was for residential buildings, 21 per cent for commercial buildings, 5 per cent for industrial plants, and 4 per cent for public buildings.

May shipments of round boilers in thousands of pounds, according to reports from the Department of Commerce, amounted to 20,992, compared with 19,352 for April and 18,881 for May, 1926. Shipments of square boilers were 18,539, compared with 16,164 for April and 19,181 for May of last year. May shipments of radiators in thousands of square feet of heating surface amounted to 12,965, compared with 10,594 for April and 14,355 for last May.

Soil Pipe

On July 11 and 13 two large soil pipe makers issued new sheets advancing prices 5 points, and now practically all foundries are quoting the prices that were the market from February, 1926, until June 22 of this year. This latter date marked the start of the series of price changes which have occurred during the last few weeks. A substantial tonnage was booked during the low price period by those foundries quoting the lowest prices that prevailed at the time, and, according to reports, it will be some time before deliveries can be completed on all this business. Current business is seasonally normal and the volume is much the same as last week's. Those foundries which did not reduce their prices to the lowest level are in a position to give fairly prompt attention to new orders.

Steel Pipe

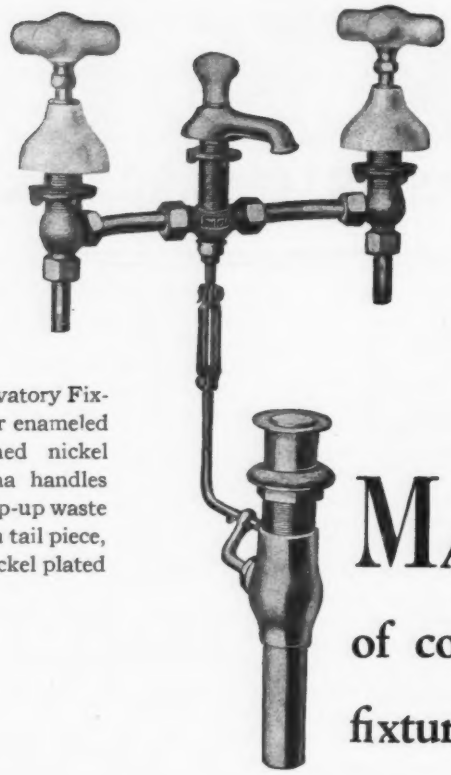
Demand for steel pipe is holding up well with no great change apparent from week to week as the year progresses, according to most makers in this territory. In looking back over a period of several months, however, the volume of pipe moving from mills into jobbers' stocks and consumption shows a gradual increase. Steel pipe mills are operating at approximately 70 per cent of capacity, and good-sized stocks are available, making possible early

SOIL PIPE MARKET REGAINS FORMER LEVEL

RECENT flurries in prices of soil pipe have culminated in a return to the base which was in effect throughout last year and up to the latter part of June, this year. The reductions, followed by the advance, shook loose a considerable number of commitments which will take some time to work off by the foundries which accepted the low-price business. No further developments were uncovered during the week in the range boiler market, not all makers meeting the low prices recently established by a leading interest. Prices of other commodities covered by this report were unchanged during the last several days.

From all sections of the country come reports that plumbing and heating activity, as measured by the movement of material into consumption, is well sustained and, if anything, increasing slightly. Manufacturers are shipping promptly. Wholesalers are maintaining working stocks and, in their ordering, taking advantage of the ease with which they can secure deliveries by purchasing only in small lots.

According to F. W. Dodge Corporation, June construction contracts broke all existing building records, amounting to over 600 million dollars. They brought the volume of construction started during the first half of the year up to $3,187,993,300, which is 2 per cent ahead of the first half of 1926.



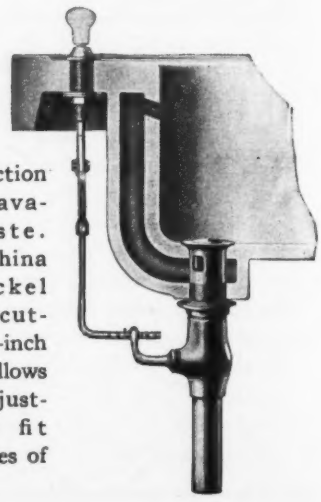
No. 350 Combination Lavatory Fixture for vitreous china or enameled iron lavatories. Polished nickel finish and vitreous china handles and bell escutcheons. Pop-up waste with china knob, 1¼-inch tail piece, removable seat valves, nickel plated spout.

MANY different types of combination lavatory fixtures worked out by UNITED designers spent strenuous months on test lines in our experimental department before this No. 350 won out. And even then it served on a lot of actual jobs before it went on the market. That's why we were sure in advance of the enthusiastic reception it met from Jobbers and Plumbers everywhere. UNITED always gives you this guarantee of satisfaction and profit - - - -

THE UNITED-OBERNDORF CORP., CLEVELAND, OHIO

UNITED

TRADE MARK REG. IN U. S. PAT. OFFICE



No. 370 Positive action Pop-up Lavatory Waste. Vitreous china knob, nickel plated escutcheon. 1¼-inch tail piece allows for full adjustment to fit various types of lavatories.

deliveries to wholesalers. Prices are firm and have not changed.

Wrought Iron Pipe

A seasonal and generally satisfactory demand prevails for wrought iron pipe, in the opinion of makers' representatives in the Chicago territory. Mill production is being maintained at a steady, high enough level, to insure prompt deliveries of pipe. Wholesalers, for the most part, are able to make early deliveries of ordinary orders from stocks on hand, depending on mills for aid when unusually large demands arise. Prices are firm and unchanged.

Enameled Ware

Close range buying continues to predominate the enameled ware market. In general, wholesalers are adhering to their policy of buying ware in small quantities as needs are created and, as a result, are calling on manufacturers frequently for immediate shipment of material for replacement purposes in order to maintain safe working stocks. Wholesalers, however, while holding stocks at a minimum, are able to meet the ordinary requirements of their trade from stocks on hand without difficulty. There are ample supplies at factories which wholesalers can call on when unusually heavy demands are created. Prices have not changed.

Pottery

Although wholesalers are not anticipating their future needs of pottery and are confining their buying to actual requirements, shipments of staple ware total a fairly good volume. Manufacturers have good-sized stocks of staples on hand and are in a position to fill promptly requests from wholesalers for early shipment. While wholesalers' stocks are not heavy, they are of sufficient proportions to meet the ordinary requirements of their customers, depending upon the protection offered by makers' stocks when emergencies arise. Demand for specials is maintaining a good level. No price changes were announced during the week by makers.

Plumbers' Brass Goods

The demand for both cast and tubular brass goods, while trailing that of last year in the opinion of nearly all makers, is, nevertheless, quite healthy for this season. From reports it appears that current interest is slightly greater for cast than tubular items, which in part is attributed to the fact that many wholesalers are giving consideration to their requirements almost certain to arise within the next month or month and a half, when finishing goods will be in greater demand. Close range buying, however, predominates in the case of both items. Manufacturers' stocks are large enough to eliminate any undue delays in shipments, and wholesalers, also, can supply the ordinary requirements of their trade without trouble. Makers have not announced any price changes.

Range Boilers

The low prices recently announced by one large manufacturer and followed by at least one other maker are not generally quoted by all manufacturers. They have not stimulated demand to any extent, according to reports of business, the week's activities consisting of small-lot buying for actual needs. Manufacturers' warehouses are adequately supplied with boilers, insuring prompt delivery as needed.

Boilers and Radiators

Current demand for boilers and radiators is about normal for this season of the year, and is at close to the same level as last week. One large maker in this territory reports very good boiler business for this period. Orders placed for immediate shipment receive prompt attention, as manufacturers' stocks are of good size and well assorted. Prices have not changed and are firm at existing levels.

NEW YORK

Business in the territory supplied by the New York market is continuing at a fairly good pace and is showing a tendency toward a slight gain from week to week. While some sections of New York State and Northern New Jersey are less active than others and are giving a much poorer account of themselves than they did last year as far as consumption of plumbing and heating materials is concerned, still the total volume of sales is such that most manufacturers are satisfied. They are at least given an optimistic outlook on the last half of the year because of the total volume of the first half, in spite of the interruptions which marked the first five months coupled with the present rate of demand.

Building reports embracing this area show a continued slight upward movement for the first weeks of July. This increase, however, does not give this period the same volume enjoyed at this time last year, but a gain is evident over the closing days of the past June. The loan money that is available for residential and other bona fide projects seems to be ample. Real estate dealers claim that a healthy movement of newly completed homes prevails and that the present sound business basis enjoyed in this territory gives a desirable aspect to future construction.

Manufacturers' prices for the most part on nearly all items are showing some inclination toward steadiness. This is also true of the resale prices of wholesalers but in a lesser degree.

Soil Pipe

The return of practically all manufacturers of soil pipe to the base prices that held for more than a year has greatly lessened the concern that pervaded the trade for the past few weeks. Some of the wholesalers were disappointed by the non-acceptance of their entire commitments as manufacturers guarded against the overtaxing of their delivery capabilities at the low levels. It will undoubtedly be some weeks, however, before tonnage placed at the lower prices is all moved.

Steel Pipe

The trend in the demand for steel pipe continues upward, which keeps the tonnage moving into this market quite substantial in volume. A large percentage of this business comprises rush orders from jobbers intent on bolstering their inventories, which in numerous cases are held just above the shortage point. Little is heard of direct-to-the-job shipments, as wholesalers are almost entirely supplying their trade out of stock. Mills are producing at a good rate and find little or no difficulty in making satisfactory deliveries. Prices are firm and unchanged.

Wrought Iron Pipe

Jobbers are governing their commitments for wrought-iron pipe by the demands made on them by their customers. Mills are called on to fill numerous orders for comparatively small quantities in assorted sizes, thus giving consumption a position slightly beyond that of June. Mill quotations are steady and little is heard of weakness in the resale prices of wholesalers. No time extensions are required by manufacturers in making shipments.

Enameled Ware

Buyers for wholesale houses are not committing themselves to any extent for the future, but are placing a large amount of business at this time for ware intended for specific jobs, together with some stock ordering to maintain their holdings. Plumbing contractors are in the market for pieces of ware intended for replacement and alteration work which, totaled, is absorbing substantial quantities. Deliveries on practically all types are prompt,

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DEVLIN MFG. COMPANY.

OWNED BY S.S. FRETZ JR., & CO.

23RD STREET and SEDGLEY AVE., PHILADELPHIA, PA

as manufacturers' warehouses are in good shape. No price changes have been announced.

Pottery

The volume that placements for pottery intended for projects under way entail is steadily showing improvement. Jobbers find a constantly active demand for staples which requires that they make frequent calls on manufacturers to ship small rush orders. Makers are taking care of this business satisfactorily and are also taking care of business calling for special pieces in the usual required time. Prices remain unchanged.

Plumbers' Brass Goods

Little or no change is seen in this review of the brass goods market over that of last week. Reports received from the representatives of manufacturers vary as regards volume. Some are well ahead, while others are behind the totals shipped during this period last year, but, averaging all the business, 1927 appears to be holding well in comparison. Frequent releases received at the factories reveal that a substantial volume of both types of brass goods is required by plumbing contractors. Deliveries are good with the possible excepted instance of one tubular maker whose volume has been so large that his reserves are greatly reduced. Prices are unchanged.

Range Boilers

Conditions show little change over last week, as few, if any, range boilers have come into this market at the new low price. The question of rebates to jobbers with boilers rolling at the time the new price levels were announced is causing some confusion, which is augmented by the uncertainty as to whether or not some makers will meet the latest quotations. The reductions have not stepped up demand and few wholesalers have large stocks. Factories are making prompt shipments from their large assorted stocks.

Boilers and Radiators

The first half of this year has been so far ahead in this territory of what was expected by manufacturers of boilers and radiators that it is felt that the balance of 1927 will make the year compare well in tonnage with 1926. Jobbers have not as yet begun to file orders with specified shipping dates attached and continue to depend on the ample stocks of makers to care for any rush requirements. Prices are comparatively steady and unchanged.

PHILADELPHIA

There most assuredly have not yet been any signs of the lull that is usually expected to set in soon after July 1, this probably being due to the fact that this district did not have the early season boom that salesmen have come to expect during the past several years. In fact, manufacturers of some products state that the week just closed shows a slight increase in the call for the goods they have to sell the trade, and these men show a disposition to predict better business in August than was true in June and so far in July.

Price conditions have not changed a great deal since our report a week ago. A forward movement in soil pipe, forecast last week when one large foundry returned prices to the base that most makers had quoted for some months previous to the recent flurry, was in evidence, several makers following this lead. Wholesale margins show little, if any, change. Credit conditions show little or no improvement. Deliveries of practically all items covered by this report can be made promptly.

Soil Pipe

Several foundries followed the lead of the large maker who last week advanced his prices five points above those which most manufacturers were quoting, and apparently the larger makers are now practically all on the higher base, which is the same which prevailed from February, 1926, to June, 1927. Some foundries took a fair amount of business at the quotations five points lower, but demand showed no acceleration at the new high. Except for those foundries which have considerable tonnage to ship to fill orders placed at low figures, deliveries can be made without delay.

Steel Pipe

The evenness which has been a characteristic of this market for some months continues. Wholesalers continue to be conservative in the placement of orders for steel pipe, ordinarily deferring action until actual needs require early shipment to replace stocks. Prices are holding the same level. Mills have little trouble in making prompt shipments when desired.

Wrought Iron Pipe

Lack of sustained activity in the building of the type of structures that ordinarily use wrought iron pipe keeps the tonnage of this commodity reaching this market from becoming large. July business apparently has been below that of the same period in June so far. Prices quoted by both mills and distributors show no change. Quick shipments can be made in most cases.

Enameled Ware

The average manufacturer of enameled ware, it is believed, has shipped a smaller volume of ware into this field so far this year than he did during the same period in 1926. There is practically no forward buying by wholesalers or contractors, good shipping facilities and evenness of price quotations making such buying methods unnecessary. Individual reports from various manufacturers continue to vary, with the demand apparently spotty. Prices have not changed.

Pottery

One large maker of a complete line of ware enthusiastically reported an increase in demand which ranged from staple items to the highest grade of specials, and which was keeping salesmen busy following up leads. Another large maker states that business is fair, while a third big concern reports its customers slow to order staples, as they already have contracted for enough to cover their needs for some time. A smaller concern, devoted principally to the making of staples, believes there is a slight pickup in business. No price changes have been reported since last week. Early deliveries of staple ware can be made by most manufacturers.

Plumbers' Brass Goods

Those cast brass manufacturers whose customers are beginning to use up the brass they contracted for earlier speak of a revival of interest by wholesale buyers, with some placement of orders. Others find that current demand is rather light, but that calls for shipments are coming through in fair volume. Current business continues to form the major part of the shipments being made by the manufacturers of tubular goods. Manufacturers have not issued new price sheets.

Range Boilers

As is usual when there is a reduction in prices, orders received are for only enough boilers to take care of immediate needs by the contractors. The average wholesaler did not have large stocks on hand, however, and few were hit hard by the recent reduction. Good plant inventories made quick shipments easy.

Boilers and Radiators

The wholesaler is getting a good amount of business from heating contractors and is therefore in the market for a considerable amount of radiation and boilers. Shipments into the territory involve a good volume. Prices are being maintained on the same level as a week ago.

NEW ENGLAND

There have been no definite changes noted in the demand for plumbing and heating supplies during the past week, although the trend of the market, gradual in its upswing during preceding months, has not lost forward momentum. Spectacular developments are not numerous, but on the other hand individual residential and industrial enterprises, intermingled with a good amount of alteration work, are steadily engaging contractors' services.

F. W. Dodge Corporation reports that home building continues to maintain its steady pace, their records showing a total of $16,557,300 for this class of construction during the month of June, which is 46 per cent of all developments in New England, the grand total being $35,705,300. This latter figure indicates a drop of 14 per cent from May, 1927, and 8 per cent from June of last year. The first six months' construction total for this district was $204,256,700, which was a decline of 3 per cent from the same January to July record of 1926. Contemplated new work reported in New England last month aggregated $39,831,900.

Jobbers have habituated themselves to buying for their near-at-hand requirements and stocks at distributing points are generally not largely augmented. Plumbing and heating men, however, find no delays in shipments as the stocks of wholesalers are well varied. Makers are generally able to ship material as requested in so far as there is no appreciable curtailment in production and ample reserve supplies are being kept. Although tardy collections are noted among a number of contractors, there are no disquieting influences attending the market. The labor situation continues steady and prices of major commodities have undergone no changes since the last report.

Soil Pipe

Following the price fluctuations which occurred during the past several weeks, the market is apparently once more stabilized. As far as can be ascertained, all foundries are quoting on the basis of prices which existed prior to declines issued during the week of July 2. Many makers have a good number of orders on their books for shipment at their convenience, which were placed at the aforementioned lower prices. Jobbers' stocks are gradually assuming larger proportions as some of this tonnage is being received into their warehouses. Deliveries from sources are being made satisfactorily.

Steel Pipe

Mill shipments are reported as only fair in so far as distributors are not anticipating in any large way. Volumes, however, are not on the whole much behind those of last year, for fill-in orders received by mill representatives are becoming more frequent. Stocks at jobbing points are ample for the present and are well balanced. Requests for prompt shipments are well met by mills' maintenance of good stock sheets. Prices are firm and unchanged.

Wrought Iron Pipe

While June brought very good business to some mills, the month so far is somewhat behind in the number of orders booked. Little activity during the past week was reported by one maker but, due to the irregularity of demand, he is not discouraged. Jobbers, as a rule, come into the market only when their supplies on hand have fallen below the safety level. Mill shipments are effected as wanted. The market is firm and prices have not changed.

Enameled Ware

Buying by wholesalers has been somewhat stimulated during the past week, one maker reporting exceptionally good volume. Good stocks at factories insure quick deliveries to jobbing points, a fact which eliminates the necessity of distributors taking large quantities into their warehouses. Little advance ordering is being done as most jobbers are content with a 60-day supply, which in most cases shows even balances of the commonly used pieces. The market continues firm with no price changes.

Pottery

Movements from potteries of the more expensive type of ware are reported as continuing good. Jobbers' holdings of regular ware are not heavy. Several potters say that the lack of wholesalers' interest in their future requirements and their methods of buying in only sufficient quantities to guarantee their trade quick delivery service are responsible for slow business. Makers offer prompt shipments in so far as they have generally good surpluses. The price situation has not changed and the market is steady.

Plumbers Brass Goods

No radical increases in their volumes are experienced by manufacturers, but consistently steady movements of both cast and tubular goods to jobbers' stocks, even though these are light in their nature, afford satisfaction. There continue releases on previously made contracts and some new business being received for wholesalers' next 30- to 60-day requirements, but the general attitude of jobbers is towards keeping their stocks only at margins of safety. Replacement orders are given prompt attention by makers. No price changes have been made and the market is generally firm.

Range Boilers

No change in demand is reported by makers, who state that shipments consist of frequent small-sized orders from jobbers. The latter are stocking only for their present wants and are not specifying to any extent for future requirements. Stocks at sources are abundant as are supplies at distributing points in so far as the present needs of plumbing contractors are concerned. Deliveries from sources are easily effected. No price changes have been made.

Boilers and Radiators

Varying reports are received concerning the status of this market, one maker reporting normal business, another stating that sales so far this month are not commensurate with those of June, and a third finding a considerable brightening in shipments during the past week. Generally, increasing activities are anticipated. Shading of prices is encountered by one maker, but the market on the whole is firm. No price changes are noted.

PACIFIC COAST

Coast conditions have not shown any change during the past week and business as a whole is fairly active. Jobbers' out of stock prices to the trade vary in the different jobbing centers and continue firm in some and soft in others.

Soil Pipe

Most of the demand for this commodity is in small lots for immediate shipment, although the total tonnage being used on the Coast at present is well up to normal. Most distributors have fairly well-assorted stocks and also tonnage en route from foundries. Jobbers' prices to the trade for out of stock delivery remain unchanged.

Steel Pipe

A steady demand for steel pipe continues, although it is mostly in small lots for actual requirements. There is very little forward buying being done by the trade, as most distributors have ample stocks and prompt delivery can be made on all requirements. There is also considerable foreign pipe making its appearance in the Coast markets. Prices for out of stock delivery remain unchanged.

Enameled Ware

Recent declines in prices by California jobbers have not increased the demand for this commodity to any extent and most of the trade is purchasing only for actual requirements. Distributors generally are carrying small stocks and depending upon nearby factories and manufacturer's warehouse for prompt replacement of merchandise as sold.

Pottery

Pottery is moving fairly well, although most purchasing is being done for actual requirements. Jobbers are carrying small stocks, and inasmuch as this ware is now manufactured in greater quantities on the Coast than the Coast itself can absorb, no difficulty is experienced in obtaining prompt deliveries from factories. Jobbers' prices to the trade are based on present replacement costs and remain unchanged.

Plumbers' Brass Goods

While the total volume of brass goods being used at present is well up to normal, there are still so many different distributors of this product on the Coast that the individual sales continue to grow less. Prices to the trade continue at a low level established since the first of the year and remain unchanged.

Range Boilers

The demand for range boilers seems to be growing less month by month. This is particularly true in California, where, in most of the larger cities, it might be attributed to the growing use of the combination boiler and heater. On the latter commodity, sales are well up to normal. Jobbers' prices to the trade on range boilers remain unchanged.

The Metal Market

	July 18	Average June, 1927	Average April, 1927	Average 1926
PIG IRON—				
No. 2 foundry, Chicago, Furnace	$20.00	$20.00	$20.00	$21.65
PLATES AND SHEETS—				
Steel boiler plates, Pittsburgh, per lb.	1.80c	1.80c	1.85c	1.89c
Blue annealed sheets, No. 10, Pittsburgh, per lb.	2.25c	2.25c	2.20c	2.40c
Black sheets, No. 24, Pittsburgh, per lb.	3.00c	3.00c	2.80c	3.17c
TIN—				
Straits tin	64½c			
COPPER—				
Prime Lake, f. o. b. refinery	12¾c			
Electro, delivered	12½c			
LEAD—				
Chicago	6.00c			

The Old Metal Market

Dealers' Buying Prices

	Per lb.		Per lb.
Aluminum clippings	19½c	Copper, light	9 c
Block tin	60 c	Copper, uncrucibled wire	10½c
Brass, light	6¼c	Faucets and valves	8¾c
Brass, heavy mixed	7¼c	Lead, heavy	5¼c
Brass, red	9 c	Solder joints	10 c
Copper, crucible	11 c		

NOTE: Prices are those quoted on Monday of this week.

SEATTLE SALESMEN TO TAKE VACATIONS AT SAME TIME

A custom which has worked out very satisfactorily in the Seattle, Wash., territory for the past few years is that of the jobbers' salesmen taking their vacations at the same time. This year will be no exception, and from July 23 to August 7, master plumbers in that city will not receive calls from the salesmen of the various wholesale houses.

The Stock Market

Quotations furnished by Frazier, Jelke & Co., Chicago

Par Value	1927 High	1927 Low	Quotations of July 18, 1927	*	Bid	Asked	Last
25	131	110½	American Radiator Co., com	A	127	127½	127
100	137½	133	American Radiator Co., pfd	A	132½	133	132½
50	48½	41½	Anaconda Copper Mining Co	A	44⅝	46	44⅞
NP	38⅞	26	Brunswick-Balke-Collender Co	A	30½	31⅛	30⅛
NP	94	42	A. M. Byers Co., com	A & F	88¼	88¾	88¼
100	115	105¾	A. M. Byers Co., pfd	A & F	109	111	109
100	120	115½	Century Electric Co., com	G	115	.....	116
100	106	101	Century Electric Co., pfd	G	100	103	101
50	48½	43⅞	Chicago Nipple Mfg. Co., "A"	B	48⅝	49	48⅝
50	35½	31	Chicago Nipple Mfg. Co., "B"	B	35⅜	36	35⅜
25	52	47	Crane Company, com	C	48	49	48
100	121	116½	Crane Company, pfd	C	119½	120	119½
100	95	84½	Detroit Brass & Malleable Works	D	90	95	95
20	30	26⅛	Eagle-Picher Lead Co	I	26	26¼	26¼
NP	43½	37¼	Fairbanks, Morse & Co., com	A	38	38½	38
100	118	106	Fairbanks, Morse & Co., pfd	A	108	112	108
NP	83	60	Johns-Manville Corp	B	83	84½	83
100	161	100	Jones & Laughlin, com	F	155	.....	155½
100	120	117	Jones & Laughlin, pfd	F	119	120	119
10	21	16	Michigan Copper & Brass Co	D	19	20	20
100	107¼	95	National Lead Co., com	A	107¼	107¾	107¼
100	109¼	104⅞	National Lead Co., pfd	A	108¼	109	108¼
100	106	102	Ohio Brass Co., pfd	H	105½	106	105½
NP	101	83	Ohio Brass Co., "B"	H	82	82½	82
25	.....	.....	Pierce, B. & P. Mfg. Corp., com	U	24	27	25
100	101	99	Pierce, B. & P. Mfg. Corp., pfd	U	99	105	99
NP	27¾	21½	Richmond Radiator Co., com	B	28¼	28¾	28¼
NP	56	41½	Richmond Radiator Co., pfd	B	41½	42	41½
100	65	53	Scovill Mfg. Co	U	55	57	55
25	96	78	Standard San. Mfg. Co., com	F	79	82	79
100	118¼	110	Standard San. Mfg. Co., pfd	F	115	.....	115½
100	.....	.....	Trenton Potteries Co., com	U	45	55	45
100	.....	.....	Trenton Potteries Co., pfd	U	95	105	95
100	244½	202	U. S. Cast Iron P. & F. Co., com	A	237	238	237
100	116	112	U. S. Cast Iron P. & F. Co., pfd	A	115½	116	116
NP	42	38	U. S. Radiator Corp., com	D	38	38½	38
100	112	96¼	U. S. Radiator Corp., pfd	D	95¾	96¼	95¾
100	65½	37¼	U. S. Rubber Co., com	A	43½	44¼	43⅞
100	111⅜	85¾	U. S. Rubber Co., pfd	A	95½	96	95½
100	126⅝	111⅜	U. S. Steel Corp., com	A	125½	126	125½
100	133¾	129	U. S. Steel Corp., pfd	A	133¼	133¾	133¼
NP	27	17½	Walworth Company	A	18⅞	19½	18⅞
NP	17	9¾	Williams Oil-O-Matic Htg. Corp	C	9⅝	10	9⅞
NP	7	4½	Wolff Mfg. Corp	C	4½	5	4½
NP	97½	60¼	Youngstown Sheet & Tube Co	A	86⅜	87½	86⅜

*Where listed—

A—New York Stock Exchange
B—New York Curb Exchange
C—Chicago Stock Exchange
D—Detroit Stock Exchange
E—Boston Stock Exchange
F—Pittsburgh Stock Exchange
G—St. Louis Stock Exchange
H—Cleveland Stock Exchange
I—Cincinnati Stock Exchange
U—Unlisted Stocks

WESTERN NEW YORK TRADE GOLFERS' JULY MEET

George Crane, with a 71, captured the Western New York Trade Golf Association cup by scoring low net in the monthly tournament conducted by that body at Transit Valley Golf Club, near Buffalo, N. Y. V. B. Lyman, with a 74, won the guest prize, and incidentally had the low gross of the tourney, an 84. The duffer's cup went to E. P. Henning, who turned in a gross of 135.

The members were the guests of C. W. Farrar. The tournament was ably conducted under the supervision of Alfred A. Ahlff. The next event will be conducted about the middle of August at Cherry Hill, where the members will be the guests of N. L. Danforth, of Buffalo, N. Y. Net scores follow:

George Crane	71	S. Houton	79
G. McWarder	72	Walter Voisinet	80
William Frazer	72	Irving Vogel	85
G. Schildmiller	73	R. P. Wettstein	85
V. B. Lyman	74	E. P. Henning	85
S. Carfer	74	C. W. Farrar	86
N. L. Danforth	75	A. A. Ahlff	90
Charles Evans	76	C. Sawade	90
L. Caftin	76	H. Hexamer	93
S. C. Moss	77	George Gregg	99
Warner Spencer	77	Ross Thornham	117
R. Lawrence	78		

Keep Your Records Up-to-the Minute

Records of the plumbing and heating industry—as in most other lines of business—soon become out-of-date and practically useless unless they are revised as changes occur.

New concerns start in business right along, consolidations take place, new specialties are constantly coming out to keep abreast with the times, some firms discontinue operation or change their lines, others move to different locations, etc. Within a year's time a surprising number of changes are necessary to make your records as useful and reliable as they should be.

By keeping in close touch at all times with every branch of the industry over a long period of years, we have a very wide range of facilities for collecting new matter, checking up, verifying and completing data for **Domestic Engineering Catalog Directory.** Our staff of experts is kept busy on this particular work every day in the year, so that each new edition of the book contains the latest available information.

Get the Latest Data

The 1927 edition, recently off the presses, gives you up-to-date and complete data regarding the products of some 4000 manufacturers of plumbing and heating supplies.

Every item used in the industry is listed under its proper heading together with the trade names and concerns who make it. Following this is an index in which each article is crossed according to the various titles by which it is commonly known. It requires but a moment for the user to locate the sources of supply of all products in which he is interested.

Nearly 1300 pages are devoted to the condensed catalogs of a large number of concerns, with like products grouped together for easy reference and comparison. This gives the buyer a bound catalog and reference file completely indexed for his desk, in addition to a purchasing guide.

Arranged in alphabetical order in a separate section, are the names and present street addresses of all manufacturers listed in the other sections of the Directory.

Whatever other records you may have available, you need the latest, most complete and authentic purchasing information contained in this Directory.

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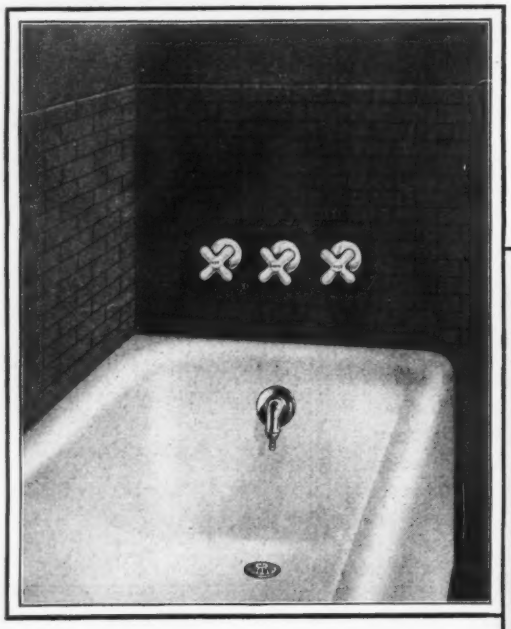
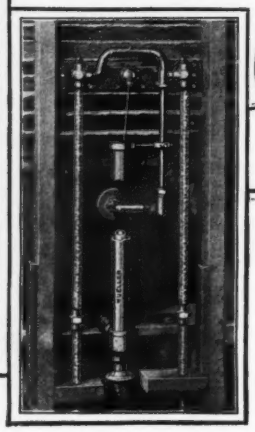


Exposed brass parts furnished in nickel or chromium plate as specified



Adjustable
to any installation requirements!

THE Mueller G-4425 Built-in Bath Fitting is adjustable to meet any conditions encountered in installations. Adjustments to rectify errors in the roughing-in, to avoid joists, etc., are easily made because of special design and construction.

It is simple to install and is completely assembled at the factory. The entire valve unit may be removed from the shell thus simplifying washer replacements. No special tools are required for repair—a pipe wrench will do it all. All parts are removable from the face of the wall. Stem is positive seating. String type graphite asbestos packing absolutely prevents leaks and is easily removed for replacement.

The handles and escutcheons are vitrified china of massive design and are stronger than porcelain. China spout furnished on specification; brass spout regular.

There are other important features that can't be listed in this space. Write us for the complete details.

MUELLER CO. (*Established 1857*) Decatur, Illinois

BRANCHES: NEW YORK SAN FRANCISCO LOS ANGELES

CANADIAN FACTORY: MUELLER, Limited, Sarnia

MUELLER

FAUCETS & VITREOUS WARE

Plumbing Education

(Continued from Page 43)

10 and 21 are connected into stack E it is equivalent to running these connections into stacks in an entirely different part of the building, which is impracticable. See Fig. 21 for a better method. Vents for 17 and 18 for two of the 29 group connect together at such a low point that waste would pass through the vent connection; this is also true of 22. 4 and 9 should be vented. A unit vent could be applied to the two 36 fixtures.

Fig. 24.—There are too many lines of vertical main vents for the work supposed to be handled by stacks A and B. Four lines are used, whereas the work calls for not more than two, and one could be made to do the work, especially if circuit venting were used. Drinking fountains 9, 16, 24 and 28 are at the front of the building, whereas 25, 33 and 34 are at the rear,—therefore the latter three fixtures would not connect into the same stack as the others; 2, 3, 6 and 8 should be stack-vented. There are many crown vents to be noted, all of which should be changed to continuous vents.

Fig. 25.—When this problem (May 1, 1926) was laid out, and the stacks A, B and C were located, it was with the idea that circuit venting would probably be employed. This would have resulted in a more systematic arrangement than shown in this drawing. Group 18 for instance, could have wasted into stack A and vented into stack B very nicely. In working out such a problem as this on paper, we should look for as systematic and practical a layout as if we were actually working on the job itself. There are quite a number of crown vents used. Group 2 urinals have a circuit vent, but on such a vent P traps should be used. There are too many vertical lines of main vent. Water closet vents have square bends which will not drain. These vents should branch at a sharp angle.

Fig. 26.—As in Figs. 24 and 25, the work should be

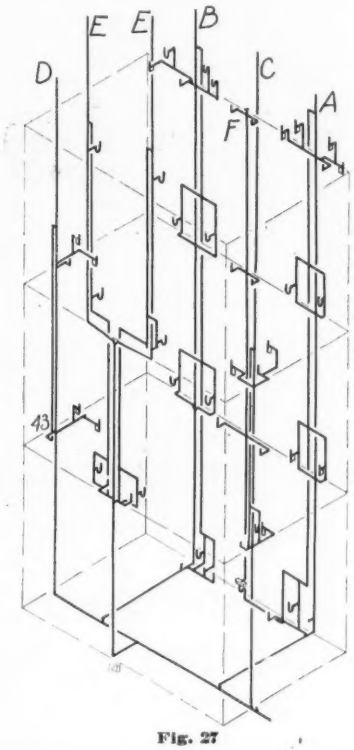


Fig. 27

Good Valves—The backbone of your job

HUDSON valves are superior because they are made from red metal ingot (melted in electric furnaces), manufactured to exacting standards, and thoroughly tested against high water pressure.

Furnished either with N. P. shanks and adjustable flat china flanges, or with rough shanks and cup escutcheons.

No Panel Required

Easy to install—trouble-proof in operation—an attractive and economical fitting for the finest bathroom.

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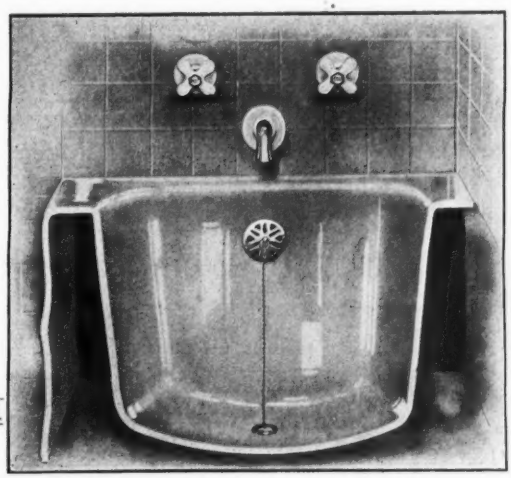
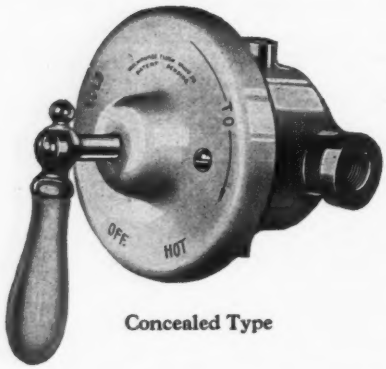


HUDSON BRASS WORKS INC.

BROOKLYN NEW YORK



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—the ultimate in simplicity. High grade red brass castings, all working parts renewable, no binding, positive closure, making this mixing valve

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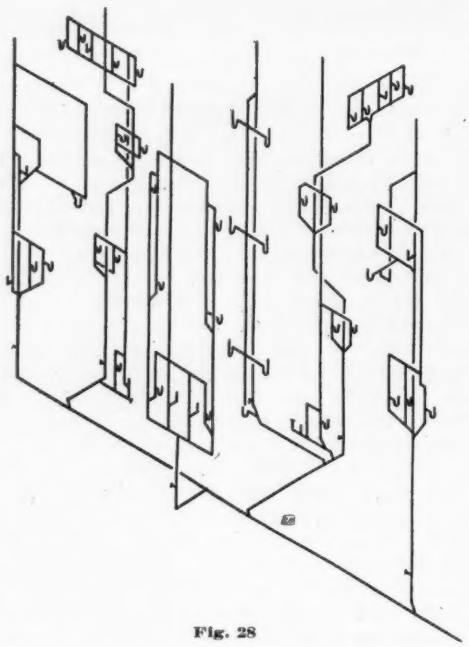

Fig. 28

arranged more systematically. For instance, if the soil stack had been located at the left of groups 1 and 16, loop or circuit venting could have been used to advantage. As in the other elevations also, there are too many main vent stacks. These amount to about six, whereas three would seem to be sufficient. Minor errors are the same as in the preceding two drawings. Attention to these few points should enable much better work to be shown next time, for the underlying understanding seems O.K.

We now come to several solutions of the Feb. 19th problem that have been worked out in isometric or other similar method.

Fig. 27.—Whatever criticism is to be found with this

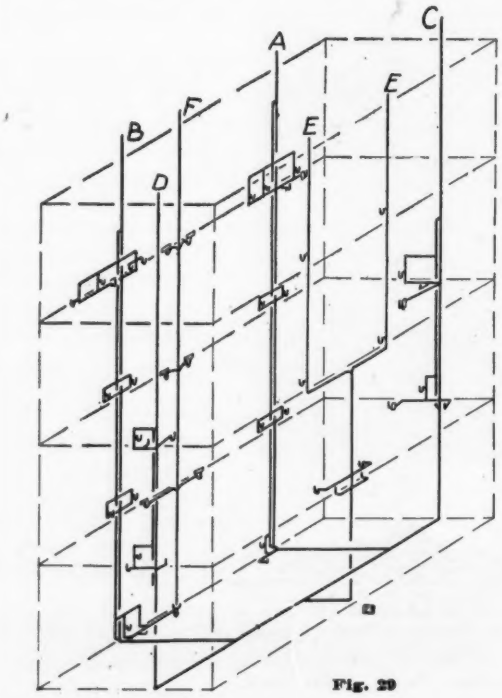

Fig. 29

JOHN N. WILLYS

"Behind the Salesman's Call"

JOHN WILLYS—outstanding American manufacturer and merchandizer—says: "The commodity must be at least two-thirds sold before the salesman closes the purchase."

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When you reread this issue think of it not as pages of printed paper but as an inventory of information and products and service to help its readers—its editorial material selected from the best of the present, its advertising pages, the paid announcements and descriptions of the output of businesses made to serve you as yours is run to serve others.

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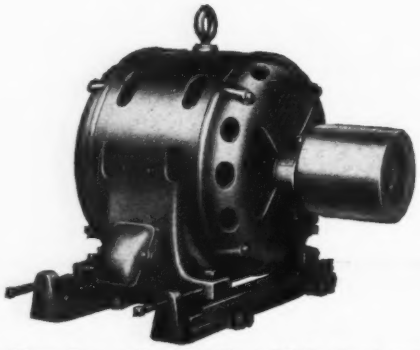
"They Keep a-Running"



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Long-Life Stators

The long life which distinguishes the stator assemblies of Century Type SC Squirrel-cage Induction 3- and 2-phase Motors results from the following design and constructional features:

1. Field-core laminations are securely clamped and held rigidly in position by heavy supporting lugs.
2. Open construction of coil ends makes it easy to blow out dirt or dust—keeps radiating surfaces clean and helps hold temperature rise well within safe limits.
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Century Type SC Squirrel-cage Induction 3-and 2-phase Motors are built in all standard sizes from ¼ to 75 horse power. Temperature rise is not more than 40° Centigrade.

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¼ to 75 H. P. Century MOTORS ¼ to 75 H. P.

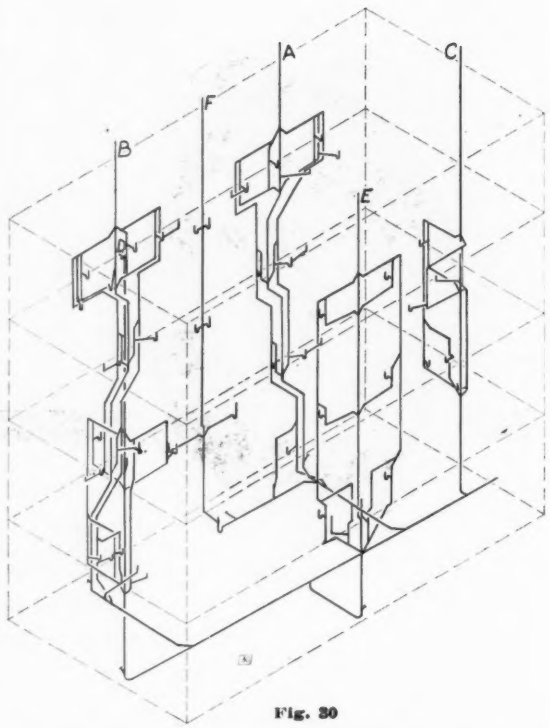

Fig. 30

drawing, does not concern the subject of isometric, but rather of plumbing methods, for the drawing is very well made. However, the two offsets on stacks A and B have been overlooked. The drawing should be made on a considerably larger scale, for the work is on so small a scale as to be difficult to figure out. The isometric is taken by viewing the work from the lower right hand corner of the floor and cellar plans. This makes the short side of the floor plan run off at 30 degrees to the right, and the long side at 30 degrees to the left. We cannot see that the vent stack for D accomplishes anything except the venting of 43. Fig. 19 shows good connections for stack D. Two lines of main vent stack between first and second floors on stack E are unnecessary; one line is sufficient. Top floor fixtures on all stacks appear to be unvented. See discussion of other drawings on this point. The refrigerator stack should pass through the roof.

Fig. 28.—This drawing is open to criticism more from a point of execution rather than plumbing methods. It is neither a straight mechanical drawing nor an isometric. The best plan is to stick to one or the other of the two, but not to mix them. Another point is this,—a drawing

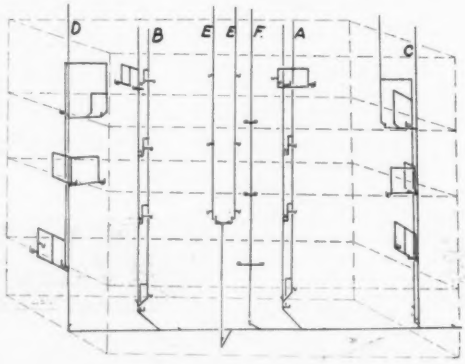

Fig. 31

of this kind should be made with a tee square and triangles,—good work cannot be done otherwise. Some of the top floor fixtures should be stack vented. Stack E does not divide into two stacks until a point is reached between the first and second floors. The refrigerator stack should pass through the roof, and never be connected into any other stack on the drainage system.

Fig. 29.—While this drawing is not an isometric, and therefore could not be used as a working drawing, it shows clearly the work called for on the plans. Stacks A and B, however, run straight up, whereas the plans show that there are two offsets on each. Most ordinances would call for the venting of fixtures on stack E.

Fig. 30.—As an isometric drawing this is excellent, and drawn in great detail. It will be noted that this isometric is drawn from a different angle than Fig. 27,—it is taken from the lower left hand corner of the plans, which makes

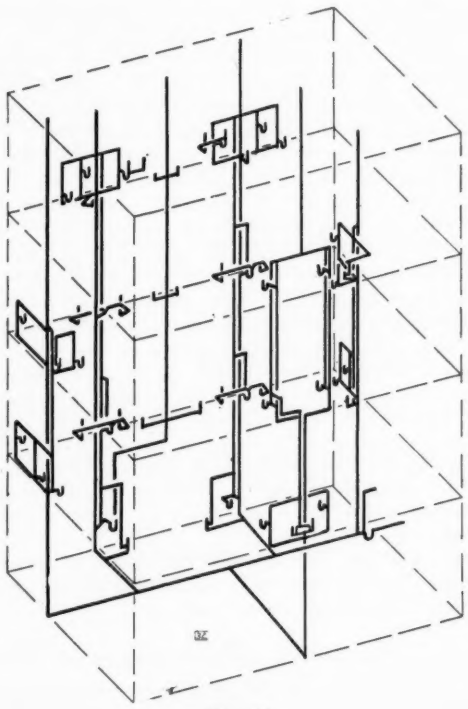

Fig. 32

the long side run off to the right, and the short side to the left.

We note that stack E is shown dividing below the first floor, whereas the plans show that this point is above the first floor.

Fig. 31.—This is a drawing similar to Fig. 29,—not an isometric but rather a mechanical perspective. Stacks C and D show fixtures on the third floor, whereas the plans show no such fixtures. The top floor bathroom fixtures on stack B, appear to be on an angle to the sink and laundry tubs, whereas the plan shows them in the same line. Stack E should not divide until a point somewhere above the first floor is reached.

Fig. 32.—Here is a drawing more nearly approaching an isometric than either Figs. 29 or 31, but not a true isometric. If it were a correct isometric, the short side of the floor plan would be at 30 degrees with the horizontal, and likewise the long side. This is clearly shown in Figs. 27 and 30. Stacks A and B have two offsets according to the plans, whereas the stacks run up straight in this drawing.

For every pump need

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Support the Stack!

THE "MEYER" INSERTABLE JOINT

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The powerful set screws grip the pipe and "takes up the slack in the stack."

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The ONLY insertable joint that supports the stack and holds the line at any height in the telescope hub.

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Sell complete protection against boiler explosions by selling and installing the Red Top Relief Valve, Model No. 1 for domestic hot water supply.

This valve relieves rising pressures before they reach the danger point. It works on the gravity principle, pressure in the system forcing a nickel weighted piston from the valve seat.

Sectional view of Model No. 1

The weight is cast in four sections to permit relief at 50, 75, 100 or 130 lbs.

May we give you further data?

Neptune Meter Company
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Red Top Relief Valves

Lawn Sprinkling Systems

(Continued from Page 21)

strips between sidewalks and curbs, and other spots where they are preferable.

In those parts of the country subject to freezing, it is imperative that positive means of drainage be employed, as it would be far too expensive a proposition to place all pipe lines below frost line, and drainage is the only logical solution. It is desirable that this drainage of the lines be done automatically without depending upon memory and to overcome the all too common procrastination. One freeze-up would ruin completely an undrained system, and only one early one would be needed.

It is also folly to attempt to pitch all lines back to one common point for drainage by means of a hand operated valve, as the cost of the additional trenching would be no inconsiderable item. Take for example, a plot of ground 500 ft. by 500 ft., assuming it to be comparatively level. The piping at one end should be about 8 in. below the surface. The slightest pitch advisable in a pipe line to assure draining is 1 in. in 10 ft. Therefore at the far end of the plot above mentioned the piping would be 4 ft. 10 in. below the surface and the average depth of the trenches 2 ft. 5 in. Were suitable automatic drains to be installed at various points in the lines, the trenches would never need be over 12 in. deep, and the saving in labor would far more than compensate for the cost of drains. Another use of drain valves will be brought out further along when the actual work of installation is described.

There are a number of different drains on the market. One consists merely of a bronze ball suspended in a bronze chamber. When the system is turned on the ball is forced against a vertical seat and closes the opening. Only 4 lb. pressure is necessary for it to function. When the pressure is turned off, the ball falls away from the seat and permits the water in the lines to discharge. It may be placed anywhere in the line as it is independent in operation from any other part of the system. This valve is illustrated in Fig. 3. There are other valves of different construction.

The other materials required are small items such as drain tile, valve boxes, etc., and the cost of these items is very small in comparison with the total cost.

THE WORK OF INSTALLATION

THE ACTUAL work of installation calls for the employment of careful men,—men that know their trade —pipe fitters and laborers with probably one good gardener or a man familiar with handling plants, removing and replacing sod, etc. No property owner wants his place cut up unnecessarily, nor does he relish the thought of unsightly strips of dead turf in his front lawn. Therefore, it is essential that the work be handled in such a manner that this can be avoided.

The first step toward the installation is to stake out carefully the location of all the heads according to the plan, then line out the pipe in order that the trenches may be made ready. Ofttimes it may be found that the pipe lines would come too close to a valuable tree or shrub and it is expedient to alter the layout slightly. It is for this purpose that the complete system should be laid out on the ground before any pipe is cut or trenches dug, for then it is not too late to make changes.

The system should now be installed. When the installation is to be in a lawn, strips of burlap should be laid along the trench line before it is dug in order that the earth removed might be laid upon it. This is done to facilitate the back filling and to avoid leaving dirt on the grass, it being practically impossible to get it all up other-

wise, and to leave earth on the grass shows carelessness. Do not forget, as mentioned before, that the work is out where the world can see it and the methods used are

Friction Table

LOSS OF HEAD IN FEET DUE TO FRICTION IN 100 FEET OF PIPE
(TO CONVERT TO POUNDS DIVIDE BY 2.3)

GALLONS PER MINUTE	1/2" PIPE	3/4" PIPE	1" PIPE	1¼" PIPE	1½" PIPE	2" PIPE	2½" PIPE	3" PIPE	4" PIPE
2	5.30	1.40							
3	11.30	2.90	0.90						—
4	19.20	5.00	1.53	0.40	0.19				
5	29.20	7.50	2.32	0.60	0.28	0.09	0.05		
10	105.00	27.10	8.40	2.18	1.02	0.34	0.12	0.05	
15		57.00	19.80	4.65	2.25	0.81	0.25	0.11	
20		97.00	30.00	7.90	3.70	1.29	0.43	0.18	
25			45.50	11.90	5.60	1.96	0.66	0.27	
30			64.00	16.90	7.80	2.73	0.92	0.38	
35			85.00	22.30	10.50	3.66	1.23	0.51	
40			109.00	28.50	13.30	4.66	1.57	0.65	0.16
45				36.20	16.40	5.80	1.97	0.80	0.20
50				43.20	20.20	7.10	2.36	0.96	0.24
70				81.00	37.40	13.20	4.42	1.83	0.45
75					42.70	14.90	5.07	2.11	0.52
100					72.00	25.40	8.60	3.55	0.88
120						36.00	12.00	4.97	1.23
125						38.90	13.01	5.40	1.33
150						54.00	18.73	7.72	1.82
175						*	23.70	9.75	2.40
200							30.30	12.50	3.12
225								14.00	4.72
250								19.70	4.80
275								22.70	5.50
275								23.60	5.71
300								27.10	6.70
350									8.80
400									11.30
450									14.10
500									17.20

Fig. 7

soon common knowledge and a careful worker is always in demand.

In removing the sod, it should be cut out in strips, moistened, and rolled if practicable, otherwise laid out upside down. Keep sod damp on hot sunny days to keep it fresh, for it dries out very rapidly and looks brown when replaced. Never open more trench nor remove more sod than it is possible to replace in one day. If this rule is followed, the ground will have the appearance of never having been disturbed and the sod removed will, if properly handled, show no signs of wilting.

In lawns, the trenches should be approximately 8 inches deep. More is unnecessary except when needed to pitch the pipe for draining; less makes it difficult to attach the heads properly. In gardens or cultivated areas, the piping should be placed at a minimum depth of 18 inches so that it will not interfere with plowing and other cultivation. The cost of this additional depth of trench is compensated for by the fact that no sod need be reset and usually as great care need not be taken in opening and backfilling, so the cost of both may be estimated at the same rate.

All pipe should be reamed clear of burrs and all loose scale cleaned out, for it is the scale that will cause the heads to clog. Even though the pipe may look clean there are usually many particles that can be cleaned out before laying. Never permit female threads to be treated with white lead or other joint compound. Start the connection and apply compound to the male thread after it is started. This will keep loose lumps of the compound out of the pipe, another serious cause of stoppage in the head.

Rigid crosses should never be used. When branch lines run off on opposite sides of a main, use two tees and a nipple. This will facilitate pitching the pipe for draining purposes and will be found to save considerable time.

In attaching heads, they should never be directly connected to the piping by rigid vertical nipples but by a series of elbows and nipples to form a "swinging joint." This is illustrated in Fig. 4. The reason for the swinging joint is that the heads should have their top surfaces flush with the turf at all times, not a little above or a little below. There is always a movement of turf; it rises

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The Penberthy Model "R" Cellar Drainer leads in profits because its enviable performance has created a constant demand for it. Its operation on the job is so positive that it is only necessary to install and forget.

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AUTOMATIC
CELLAR DRAINERS

Rundle Ware Satisfies Woman's Eternal Desire for Beauty

From the beginning of time beauty has been the eternal desire of woman. To be surrounded by beautiful things in her home is one of her most cherished ideas.

The pleasing designs and pure snow-white beauty of Rundle Ware instantly win her admiration. Her pride in it increases when she discovers how practical each piece is in actual use—designed for the utmost convenience!

The Rundle franchise is a business builder. Customers multiply fast through the best of all processes—one user telling others; enthusiastically endorsing this enameled ware of quality.

Write us today for the Rundle catalog and name of jobber nearest you.

Rundle Mfg. Company
MILWAUKEE, WIS.

RUNDLE
PLUMBERS' SANITARY ENAMELED WARE

at times, particularly in the spring and later shrinks back again. This is not generally realized but nevertheless a fact, and most particularly with a new lawn, the movement often being over ½ inch. Should the heads be rigid, they will recede below the surface or protrude above, each highly objectionable for reasons that are obvious. The swinging joint gives some flexibility and the head can follow the turf. Then too, when a lawn is rolled, as they all should be, the head should not offer rigid obstruction to the roller when it is packing the sod down, but should be flexible enough to permit its being pressed down with the turf.

LOCATING THE DRAINS

DRAIN valves should be used generously to assure a frost-proof job. The pipe lines should pitch not less than 1 inch in 10 ft. but may often follow the natural slope of the land, obviating the necessity of pitched trenching. Too many can not be utilized. A system is yet to be installed with too many drains, but too few, unfortunately, are often used.

The actual location of the drains can best be determined on the job, for to do so on the drawing board would necessitate that an accurate topographical survey be made.

Drain valves are attached to the side outlet of a tee in the run of the pipe. They should be covered by a length of drain tile and additional lengths of drain tile placed end to end, the number being dependent on the characteristics of the soil. Over the tops of joints of the drain tile a small piece of building paper, or other suitable material should be placed to keep out the earth. In sandy ground that readily absorbs water, one or two lengths will usually suffice; in clay, sometimes four or six should be used. This is illustrated in Fig. 5.

As the opening in the usual drain valve is smaller than the opening in the head, they can be clogged up more easily, therefore, they should never be placed at the dead end of a line. If necessary to place a drain at the end it should be attached, before the head, then the water rushing by and out through the head will continue to wash the screen of the drain valve and keep it clean.

Drain valves serve another important purpose besides draining the system,—sub-irrigation of trees, etc. Many trees require a great deal of moisture and watering from the surface in the quantities needed by grass and shrubs with roots near the surface is often not sufficient for their requirements. To overcome this it is common practice to locate drain valves near trees and extend the drain tile to, and sometimes around, their roots.

CONTROL VALVES

CONTROL valves are located in accordance with the plan, either in one central point or in various places about the ground. When placed in a central point, such as the basement of a house, or some similar location, they should be arranged in battery form and numbered, with a key to the numbers attached to the wall for ready reference.

When the controls are located about the property, they should be placed in valve or curb boxes, with the covers flush with the turf. They will not then interfere with the lawn mower or roller. Under no circumstances should valves be placed with wheels or stems protruding through the ground, as that little and seemingly insignificant item would create the impression of shoddiness, and a curb box is cheap.

In closing, do not forget that a well planned, carefully installed, and satisfactory system is the master plumber's best advertisement. Not only do the friends of his customers see it working and become acquainted with its benefits, but every passerby will notice its operation. A

poorly operating system is not only detrimental to the man who puts it in but to his brothers in the trade as well, for those who see the results of such a system would decide that irrigation is a waste of good money.

Make a comprehensive plan, use only the best available material, hire competent men and supervise their work, then success will be assured.

Trouble with Equalizing Lines

(Continued from Page 22)

see whether or not the seats were tight under the water pressure, but found the apparatus working very satisfactorily, so it was necessary to look further to discover the trouble.

We started the oil burner and found the water line in the boiler quite steady. By that I mean there was no great fluctuation. So we put a pressure of three pounds on the boiler, and to our surprise we found that each time the boiler return trap would fill and require pressure to equalize itself, the boiler feeder would open and let a little water in the boiler. This happened at least ten times while we were working it. Then we discovered the connections and the cause.

The reason that that boiler feeder would open and close each time was this: when the boiler return trap steam valve would open it would reduce the pressure on the top of the boiler feeder, causing the water to rise in the boiler feeder and, of course, under these conditions the water valve would be tight, but when the steam line to the boiler return trap would close off suddenly, the pressure would accumulate so rapidly on top of the boiler feeder that it would change the water line in the boiler feeder so rapidly and down far enough below the water line that the float would travel with it, open the water valve and allow a little water to enter the boiler. This would occur about every five or six minutes. So during the course of a day it would flood the boiler.

After changing the connections and taking a separate line to the boiler feeder and boiler return trap and having the equalizing lines do only what was intended of them, we cured the job and no further trouble has been experienced. So always remember this motto:

An equalizing line must be run as short as possible with no other connections if it is to equalize pressure. This applies to such connections as steam lines to boiler return traps; lines from supply header to return header; in fact, any place where you are aiming to get the same pressure on both ends of the line.

Personnel of the Baltimore, Md., branch of the Pierce, Butler & Pierce Mfg. Corp., which was opened recently. Left to right: J. J. Frey and H. Wagner of the warehouse; A. R. Springer, manager; R. J. Frank, sales; F. M. Stewart, office; J. M. Williams, sales; E. W. Salmon, sales; Miss M. White, office

Watrous

Patent Plumbing Fixtures and Duojet Water Closets

A LINE representing the most advanced ideas in sanitation. Economy of operation and ease of installation. Duojet Closets—Flush Valves—Self-Closing Basin Cocks—Combination Lavatory Fixtures—Pop-Up Wastes—Liquid Soap Fixtures, etc.

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1231 West Harrison St. CHICAGO

SIMPLEX FLUSH VALVE

Wherever users have demanded the utmost in toilet equipment you will find Simplex Flush Valves on the job. They have won their reputation and good name by giving years of satisfactory service.

Further details furnished on request

The BEATON & CADWELL MFG. CO.

Established 1894

NEW BRITAIN, CONN.

For Greater Economy

FLINTEX

Hard Rubber Toilet Seats

Full details from your jobber

The JOHN DOUGLAS CO.

CINCINNATI OHIO

O-B Brass Valves

are made in the following styles:

Flexitite Disc Gate Valves

125 lb. Standard, Non Rising Stem, No. 20
125 lb. Standard Rising Stem, No. 21
100 lb. Light Standard, No. 25

Radiator Valves

Flexitite Disc, Gate, No. 50
Steam, No. 30
Hot Water, No. 40
Packless Graduated, No. 35
Union Elbows, No. 45

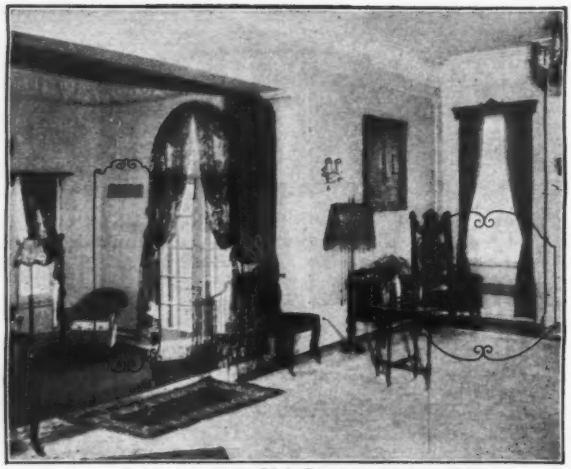
Globe, Angle and Check Valves

	Brass Disc	Renewable O-B Disc
150 lb. Standard	.....	No. 10
125 lb. Standard	No. 1	No. 15
100 lb. Light Standard	No. 1½	.....
Competition	No. 2	No. 3
Lock and Shield	No. 5	No. 5

Flexitite Disc Gate Valve Patented

OHIO BRASS COMPANY
Mansfield, Ohio

Ohio Brass Co.

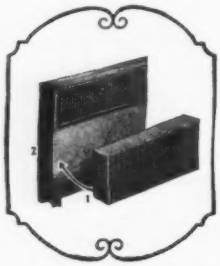


Living Room in the W. E. Hyde Residence, Memphis, Tennessee

No space wasting radiators here . . .

for in the modern home, exposed radiation is obsolete. Nothing must interfere with refinement of interior arrangement and decorations.

Built right into any standard 4" wall or partition—the Herman Nelson Invisible Radiator occupies no floor or wall space. It is not camouflaged—but *concealed*. Only the attractive outlet grille is visible.



Radiator (1) comes installed in a steel case (2) more substantial than the wall itself. The complete unit is ready to install in any 4" wall or partition.

Once installed, the Herman Nelson Radiator is out of sight and out of mind. Indestructible leak-proof and trouble-proof—it is the last word in modern heating.

Architect, heating engineer, contractor, and everyone interested in new home or modern building construction, should know the facts about the Herman Nelson Invisible Radiator.

THE HERMAN NELSON CORPORATION,
MOLINE, ILL.
Builders of Successful Heating and Ventilating Equipment for 20 Years

FREE *This interesting book of facts on The Herman Nelson Invisible Radiator.*

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Name .....

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Sales and Service

BELFAST, ME. BOSTON NEW HAVEN NEW YORK CITY UTICA SYRACUSE BUFFALO PHILADELPHIA SCRANTON PITTSBURGH WASHINGTON, D.C. CHARLOTTE, N.C. GRAND RAPIDS SAGINAW DETROIT CLEVELAND COLUMBUS CINCINNATI TOLEDO INDIANAPOLIS CHICAGO DES MOINES MILWAUKEE MINNEAPOLIS ST. LOUIS BIRMINGHAM ATLANTA MEMPHIS WINNIPEG, MAN. SAN FRANCISCO EMPORIA KANSAS CITY DENVER SALT LAKE CITY SPOKANE PORTLAND SEATTLE VANCOUVER TORONTO

HERMAN NELSON *Invisible* RADIATOR

TRADE MARK

With the Wedge Core

INDUSTRIAL TRADE MARK

Make a Stir!

(Continued from Page 28)

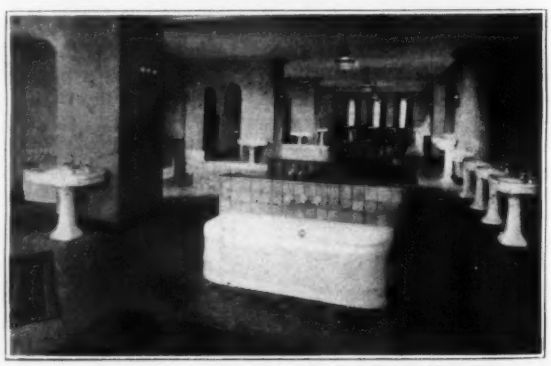
occasionally reminded of the service at their command. Weekly the newspaper carries an advertisement over the signature of the Bakersfield Plumbing Co., with some message or other from "The Happy Plumber." In other words, in one direction or another he's always creating a stir. I don't mean by that that he's doing something spectacular. But because all these different merchandising elements are at work, he's interesting someone all the time in his sales message. He's stirring up thought in a prospect's mind here and there which, when that prospect is in need of plumbing service, brings up the name of the Bakersfield Plumbing Co.

EFFECTIVE MANAGEMENT

THE MERCHANDISING activities of the good retail store are like the work of the stage hands in preparing scenes. That's what the public sees and reacts to. But back of these outward appearances there must be management to produce the right effects and to see that they are not spoiled once they have been produced.

For instance, you may put up a fine sales message and draw a lot of people into your shop, and sell them a lot of merchandise and service—but, if you charge prices for the merchandise and service which are based on guess work, you might better never have set your selling scene. Because you've spoiled it for yourself. The right kind of records will keep you informed as to what ought to be added for overhead expense; and you know what profit you want to make. Mr. Walters does. Then there are the little items like discounting bills. The discount you take this month helps wonderfully to build up the profit side of the ledger when you add it all up at the end of the year. Keeping the right men on the payroll, keeping them contented, training boys to be mechanics—these are parts of the task of management which Mr. Walters has not overlooked.

A man's general standing in the community has something to do with his success, too. A man who is interested in civic improvements and in the doings of his own craft stands a better chance of success than the man who finds time for nothing but his own little business. Mr. Walters belongs to the Kiwanis Club, the Master Plumbers Association and the Civic Commercial Association, which corresponds to the Chamber of Commerce in other cities. Of course, friendships in the first and last organizations probably bring business. But beyond that, they bring a broader outlook, a better understanding of business problems in general—and these things always make themselves felt in the management of the individual business. They help the man who wants to "make a stir."



The recently opened Boston, Mass., showroom of Kohler Co., which is located at 445 C street

THIS WEEK

AMONG MANUFACTURERS, WHOLESALERS AND THEIR SALESMEN

SCOVILL MFG. CO. PURCHASES KENNEY-CUTTING PRODUCTS CORP.

The Scovill Mfg. Co., Waterbury, Conn., has purchased the Kenney-Cutting Products Corporation, New York City, including all stocks, interests and good will, it is announced. The shower line formerly marketed by the purchased company will be made a part of its bath and shower fixture line, and will in the future be sold through the American Pin Co. division of the Scovill Mfg. Co.

S. J. Cutting, formerly president of the absorbed concern, joins the staff of the American Pin Co. division as director of sales promotion of that company, and will open offices at the 280 Broadway, New York City, offices of the brass concern. Offices maintained by the Kenney-Cutting Products Corporation at 507 Fifth avenue will be closed and all executive departments of the shower end of the business will be handled from the Broadway address.

ORGANIZE NEW SELLING COMPANY

A new company has been incorporated under the laws of the state of Ohio, with a capital of $100,000, known as the Barber Gas Burner Sales Co. The office and sales room are being located at 1806 East Twelfth street, Cleveland, Ohio. The company will distribute patented gas burners and act as distributor for the Minneapolis Heat Regulator Co. It will operate in eight counties bordering Lake Erie, between Sandusky, Ohio, and Erie, Pa. The engineering department is under the supervision of Frank Cotton, formerly manager house heating department of Republic Light, Heat & Power Co., Buffalo, N. Y., while the sales division is under the supervision of Felix J. McTernan. The officers of the company, which is a subsidiary of the Cleveland Gas Burner & Appliance Co., are: Felix J. McTernan, president; Ira E. Baker, vice president and secretary; Harry E. Kerr, treasurer.

TO SPECIALIZE ON PLUMBERS' BRASS GOODS

Announcement is made by the Ireland & Matthews Mfg. Co., Detroit, Mich., of the sale of two departments of its business, the pressed metal and stove trimmings departments. The purchasing company is the Detroit Metal Specialty Corporation. This leaves the management of the manufacturing concern free to devote its entire attention to the plumbers' tubular brass goods department.

MAY OIL BURNER CORP. HOLDS DEALER CONVENTION

The May Oil Burner Corp., Baltimore, Md., held its annual conference and convention of dealers in that city, June 27 and 28. The convention program was featured by talks by: Homer R. Linn of the American Radiator Co.; Charles Wadsworth of Barton, Durstine & Osborn; R. W. Burman of the Commercial Credit Co.; Rufus Rickhart of the Oil Heating Institute; A. P. Mudgett of the Honeywell Heating Specialties Co.; E. M. Fleischmann, president, and A. J. Fleischmann, treasurer of the May corporation.

During the convention the dealers were conducted through the laboratories of the company's plant, and were also shown the workings of the testing and assembling departments.

The Long Island Engineering Corp., Elmhurst, L. I., N. Y., was awarded the trophy for the largest number of sales during the period of a contest held by the company. Fred Heuberger, retail salesman for H. Lieblich & Co., New York City, was awarded a gold watch for selling the greatest number of burners. The convention was closed by a banquet held Thursday evening at the Southern Hotel.

NEW T. E. B. COMMITTEE SECRETARY EXPERIENCED IN ASSOCIATION WORK

Russell G. Creviston, who was recently employed as secretary to assist the budget and program committee of the National Trade Extension Bureau, brings to that work a wealth of experience in organization affairs. Sixteen years of practical organization and promotional experience have given Mr. Creviston a background and broad viewpoint of value in facing a task the size of the bureau's enlarged program. He is now studying the groundwork for the program.

Mr. Creviston worked his way through Indiana State University and was graduated in 1911 with the degree of LL. B. His postgraduate work in business administration was coupled with practical experience in retail merchandising, sales promotion and advertising. During the World War, he enlisted in the ranks, received meritorious mention and was honorably discharged with the rank of Major after two years of active service. Following the war, Mr. Creviston spent a large part of his time in the organization and legislative activities of the American Legion, resigning in 1924 as national adjutant.

In 1924 Mr. Creviston was appointed general manager of the Eastern States Agricultural and Industrial League, in which capacity he was thrown in contact with such national figures as Owen D. Young, Otto Kahn, international investment banker, and others in the forefront of national affairs. Prior to associating with the bureau, Mr. Creviston was general manager of the Wigger Co. of Marion, Ind.

THOMAS MADDOCK'S SONS CO. HOLDS SALES CONFERENCE

The sales conference called by the Thomas Maddock's Sons Co. at the plant in Trenton, N. J., was attended by practically the entire sales organization. Addresses with valuable and constructive suggestions and information led to discussions which in turn proved to be of much moment to those in attendance.

PITTSBURGH SALESMEN TO HOLD SECOND ANNUAL OUTING

The Pittsburgh Chapter No. 9, of the National Association of Plumbing and Heating Salesmen, will hold its second annual outing on Saturday, July 30, at Turner Park, Perrysville, Pa. The festivities will begin at 11 o'clock in the morning. This will be a stag affair and the members have been asked to invite their friends in the trade.

The committee in charge of the outing consists of the following gentlemen: J. H. Warne, R. C. Gormley, J. W. Kinnard, J. J. Leahy, F. A. Vance and R. L. Donoghue.

C. S. D. L. BOARD ELECTS NEW OFFICERS

At the meeting of the board of directors of the California Sanitation Development League, held Friday, July 8, at the Palace Hotel, San Francisco, the following were elected to office for the coming year: President, Curtis N. Gilley, of Gilley-Schmid Company; first vice president, Howard W. Finch, of Kohler Company; second vice president, J. E. McIlreevy, of Crane Company; treasurer, Harold M. Friesley, of the M. Stulsaft Company. Edward Looker was re-elected secretary, with a change in title to that of executive secretary.

A change in organization was also effected, the new form embodying the following: The board, consisting of nine members, divides itself into three major committees, each made up of one manufacturer, one jobber and one plumbing and heating contractor. The first committee of

Edward Looker, re-elected secretary of the C. S. D. L.; Curtis N. Gilley, newly elected president of that organization; Joseph Albach, retiring president of the league

the board is known as the finance division; the second handles all questions on public relations, including sales promotion work, and the like; the third disposes of matters having to do with trade relations, that is, ethics and craft education. These committees will prescribe their objectives which, for execution, will be turned over to the office of the executive secretary. This plan will not, however, dispense with the creation and functioning of subcommittees.

C. F. CHURCH MFG. CO. ADDS TO NEW YORK SALES FORCE

Two new salesmen have been added to the New York City branch of the C. F. Church Mfg. Co., Holyoke, Mass. The two are George G. Broughton and Cutler C. Dobbins. Both will be under the direction of D. S. Warth, branch manager, who maintains offices at 101 Park avenue.

WOLFF HOLDS ANNUAL PICNIC

The Wolff Manufacturing Corporation's annual picnic was held at Stickney Grove, Stickney, Ill., on Saturday, July 16. The plant and office were closed for that day. The attendance was about 1,500.

W. J. Woolley, president of the corporation, was there, as were H. I. Warden, vice president; A. J. Snyder, vice president; B. T. Hain, sales manager; A. J. Sitz, advertising manager; W. Mahoney, plant superintendent, and A. J. Getz, brass superintendent.

Starting at 10 a. m., there was an indoor baseball game between the main and factory offices. The factory office was victorious by the score of 3—0. At 11 a. m. the married and single men crossed bats, and, mainly through the air-tight pitching of W. Mahoney and the wonderful fielding by A. J. Snyder at third base, the married men were returned the winners with a score of 22—15. Promptly at 2 o'clock a full calendar of races was run off. Prizes were given the winners of each event. Dancing started at 3 o'clock and continued until 8 o'clock, the music being furnished by the Wolff Ten-Piece Jazz Orchestra.

The refreshments were of the best, being furnished by John Loudin, enamel shop foreman, who is also president of the village of Stickney.

The committees were as follows: General chairman, W. T. Mahoney; assistant chairmen, J. J. Loudin and F. Reinecker. Transportation committee, F. Grass; attendance committee, A. S. Maycher; prize committee and judges, L. White, H. Hallas and Mr. Norris; grounds committee, C. Meyer; lunch and refreshment committee, R. Johnson; publicity committee, D. Wall and L. Whitehouse; cashiers, R. W. Sausen and C. D. Stevens; first aid, Miss Anderson; dance, entertainment and sports committee, F. J. Palzen.

3-DAY TEST OF FLUSH VALVE

Many visitors at the Minneapolis, Minn., convention of the National Association of Plumbers were attracted by one of the features of the exhibit of the Bridgeport Brass Co., Bridgeport, Conn. A bowl set up under working conditions was automatically flushed by an electric motor at regular intervals. In service 8 hours a day for 3 days, the valve flushed approximately 11,910 times, averaging 1.4 gallons per flush, or a total of 16,674 gallons as determined by a sealed meter.

PROMINENT MEN CALLED BY DEATH

Robert A. Keasbey

Robert A. Keasbey, president and general manager of the Robert A. Keasbey Co., New York City, manufacturer of pipe covering, died recently at his home in Roseland, N. J., in his 70th year.

Frederick J. Kingsbury

Frederick J. Kingsbury, chairman of the board of directors of the Bridgeport Brass Co., Bridgeport, Conn., died suddenly July 11 at his home, 445 Humphrey street, New Haven, Conn. Mr. Kingsbury was born in Waterbury, Conn., in 1863. As a boy he attended the schools of Waterbury and studied later at St. Paul's School, Concord, N. H., and the Massachusetts Institute of Technology. His industrial career began at Bridgeport in 1899, when he became secretary of the Aluminum, Brass & Bronze Co. Later the company was purchased by the Bridgeport Brass Co., of which Mr. Kingsbury was treasurer. He was subsequently promoted to the position of president and general manager. Several years ago he resigned as president to become chairman of the board of directors. Mr. Kingsbury was a director of the Scovill Mfg. Co., Waterbury, president of the A. P. Swoyer Co., Philadelphia, and secretary and treasurer of the Bridgeport Electric Mfg. Co. He was a director of several banks. His wife, a son and a daughter survive him.

E. C. Stover

E. C. Stover, one of the world's most widely known ceramists, died at his home at Trenton, N. J., July 10 as the result of an attack of acute diabetes. Mr. Stover was one of the founders and a past president of the American Ceramic Society, a member of the Ceramic Society of England, the Societe Ceramique de France, and the American Society of Sanitary Engineering, in addition to being the last of the founders of the Trenton School of Industrial Arts remaining on the school's board of trustees. Mr. Stover also was one of America's pioneers in putting the ceramic industry on a scientific basis and contributed to it many major discoveries. From its founding until a few years ago he was associated with the Trenton Potteries Co.

E. T. G. A. MEETS AT MONTCLAIR

The Eastern Trade Golf Association held its July tournament on the thirteenth at the Montclair Golf Club with W. W. Hubbard as host. While the day was exceptionally hot, there was a breeze most of the time, and the exceedingly sporty nature of this beautiful course kept the scores rather high.

The next meet of the association will be held August 9 at Winged Foot. A tentative vote was taken by John Law of the tournament committee as to the advisability of holding an additional meet in October at Wolf's Hollow, and this will be voted on again at the August tournament, the idea being to leave on a Friday, playing Saturday and Sunday, returning to New York Sunday evening. A special car will be arranged for the members who attend, provided it is decided to hold this meet.

A vote of thanks was ordered sent to the Montclair Golf Club through Mr. Hubbard by the secretary, Raymond G. Bookhout, in appreciation of the privilege of playing this course and expressing the hope that they might have the privilege of playing it again next year.

In the morning rounds the best-ball foursome in Class A was won by George M. Scott and Captain J. Barton Garfield with a net 71 and in Class B it was won by A. Engle

Top row: A. E. Geddes of the American Radiator Co.; H. C. Booth of the U. S. Radiator Corp.; D. W. Hairs of S. S. Glauber, Inc.; Elwood White of the Thermal Appliance Co., Inc.—Middle row: G. A. Wall of the Sloan Valve Co.; Thomas Kellogg of the Bishop & Babcock Mfg. Co.; Kenneth Carmer of Crane Co.; D. J. Molloy of Crane Co.—Bottom row: J. K. Law of the Earl Judd Corp.; E. J. Carolin and Thomas Cochrane, both of the Heggie-Simplex Boiler Co.; W. A. Davis of the Youngstown Sheet & Tube Co.

and William M. Treadwell with a 73. These winners were presented with a box of golf balls each by the association.

For the medal play in the afternoon, Maurice Readey was first in Class A, with a net 80, and he selected a zipper bag given by Frank L. Patterson, Sr., of Patterson-Kelley Co. Frank L. Patterson, Sr., was first in Class B, with a net 75, and selected a prize given by W. G. LeCompte of Jenkins Bros. H. N. Booth was second in Class A, with a net 82, and selected an ice tea set offered by the association. M. A. Cordner was second in Class B, with a net 77, and selected a prize offered by Charles S. Wood of the Charles Wood Co. Harold Townsend was third in Class A, with a net 83, and selected a clock given by the associa-

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Water Closets for every type or class of service.

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Automatic Gas Water Heaters

A type and size for every building from the skyscraper to the cottage.

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(Div. Ruud Mfg. Co.)
Kalamazoo : Michigan

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EverHot
WATER HEATER
$66
$88
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GASTON DeRIDDER,
Detroit Plumber,
says:
"The installation of Ever-Hot Heaters means a good clean profit and there are no comebacks from the users. That's why I sell and install them."
EverHot Heater Co.
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Gas Drip Boxes	Roadway Boxes
Sand Traps	Solder Pots
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P" Traps	"S" Traps
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Soil Pipe, Soil Fittings, and Cast Iron Plumbing Specialties

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tion. W. A. Davis was third in Class B, with a net 81, and selected candlesticks given by Charles A. Miller of the H. B. Smith Co. M. G. Hook was fourth in Class A, with a net 83, and selected a leather golf bag offered by Wallace J. Osborn of "Domestic Engineering." G. W. Hamill was fourth in Class B, with a net 83, and selected a prize offered by John J. Donoghue, Jr., of the National Radiator Co. F. A. Murray was fifth in Class A, with a net 84, and selected a cake dish given by the association. Louis B. Daumont was fifth in Class B, with a net 83, and selected as his reward a prize given by the association.

The following are the scores for the day:

Morning Round

Class A

	Gross	Hdcp.	Net
Geo. M. Scott, J. Barton Garfield	79	8	71
Chas. S. Wood, P. L. Cooney	95	17	78
W. W. Hubbard, Frank B. Barrett	86	6	80
H. J. Reeves, Harold Townsend	80	4	76
T. M. Cochran, Grant Campbell	95	15	80
J. K. Law, Thos. M. Kellogg	84	11	73
Edward S. White, H. N. Booth	92	17	75
G. W. Hamill, W. M. Cosgrove	93	17	76
Thos. Chester, John Weil	108	18	90
Kenneth V. Carmer, C. G. Wall	90	13	77

Class B

	Gross	Hdcp.	Net
Richard E. Peck, M. A. Cordner	98	23	75
A. Engle, Wm. M. Treadwell	96	23	73
Louis B. Daumont, Verner F. Davis	94	20	74

Afternoon Round

Class A

	Gross	Hdp.	Net
J. K. Law	93	4	89
W. J. Osborn	104	17	87
Aylin Pierson (Guest)	93	16	77
A. E. Geddes (Guest)	85	16	69
E. S. White	110	16	94
H. N. Booth	98	16	82
M. G. Hook	97	14	83
F. A. Murray	92	8	84
Frank B. Barrett	101	0	101
H. J. Reeves	95	0	95
W. W. Hubbard	98	12	86
Harold Townsend	91	8	83
T. M. Cochran	(No card)		
Grant Campbell	113	18	95
Maurice Readey	98	18	80
Thos. Chester	105	17	88
P. L. Cooney	105	15	90
O. E. Goldschmidt	100	16	84
Frank L. Patterson, Jr.	98	10	88
J. B. Garfield	*88*	*0*	*88*

Class B

	Gross	Hdp.	Net
Lanzer (Guest)	127	36	91
John Weil	122	30	92
D. W. Haire	119	30	89
Wm. H. Murphy	113	24	89
T. J. O'Donnell	118	25	93
W. M. Treadwell	116	24	92
A. Engle	*105*	*21*	*84*
M. A. Cordner	101	24	77
L. B. Daumont	104	19	85
Walter Davis	101	20	81
F. G. James (Guest)	105	20	85
V. F. Davis	108	20	88
G. W. Hamill	102	19	83
Frank L. Patterson, Sr.	*106*	*31*	*75*
Richard E. Peck	*108*	*19*	*89*

CENTRAL TRADES GOLF ASSOCIATION MEETS AT ST. CLAIR

The Central Trades Golf Association held one of its most successful meetings Tuesday, July 12, at the St. Clair Country Club, near Pittsburgh, Pa. Edward Kunde of the Malone Plumbing Supply Co., Pittsburgh, arranged for the course and outdid himself as host. Being one of the hottest days this year, the course was very dry and the players were put to using the best golf in them to keep their score down. Most of the players arrived for lunch and started out with lots of pep.

D. Vance and Carl Frey played wonderful golf, both turning in cards of 84.

The meeting and dinner in the private dining room in the evening was the most spirited ever held. The long table was filled, and several distinguished guests were present. B. McFarland, past city champion of Pittsburgh, and Charles Foster of the Pittsburgh Press being the best known. The other guests present were: R. A. Jackson, J. Jennings, J. R. Buchanan, S. M. Fenner, J. Wessel, M. S. Disbrow and Joseph A. Weldon.

In the absence of Robert Tener, the president, M. Snively, vice president, took charge of the meeting and appointed Harry Harte toastmaster. New members were introduced and the prizes were awarded. A motion was made that the assessment for each meeting be increased to only $8.00 instead of to $9.00. The secretary told of the plans that had been made for the Cambridge Springs meeting to be held Monday, July 25, and announced that he had received thirty return-cards of members that expressed their intentions of being present.

The scores were as follows:

Names	Gross	Hdp.	Net	Names	Gross	Hdp.	Net
Carl Frey	84	12	72	J. R. Wills	114	25	89
M. Snively	98	24	74	J. J. Leahy	115	25	90
H. K. Downe	96	20	76	W. S. Appleby	111	20	91
L. B. McCune	96	20	76	W. Simpson	121	30	91
H. R. Rowland	94	15	79	Karl Gauerman	117	25	92
B. McFarland	81	Guest		R. P. Wettstein	123	30	93
J. Wessel	81	Guest		E. W. Stitt	126	30	96
W. L. Singer	116	35	81	Wm. Disbrow	96	Guest	
J. A. McKissock	107	25	82	G. V. Hamilton	132	35	97
Wm. B. Bryar	103	20	83	Peter O'Neill	133	35	98
Harry Harte	98	15	83	M. J. Jennings	102	Guest	
D. Vance	84	0	84	R. A. Jackson	115	Guest	
Henry Bailey	104	20	84	C. M. Fenner	134	Guest	
H. Semler	105	20	85	B. Buchanan	147	Guest	
J. W. Kinnard	121	35	86	Bert Runnels	148	Guest	
E. Kunde	114	25	89				

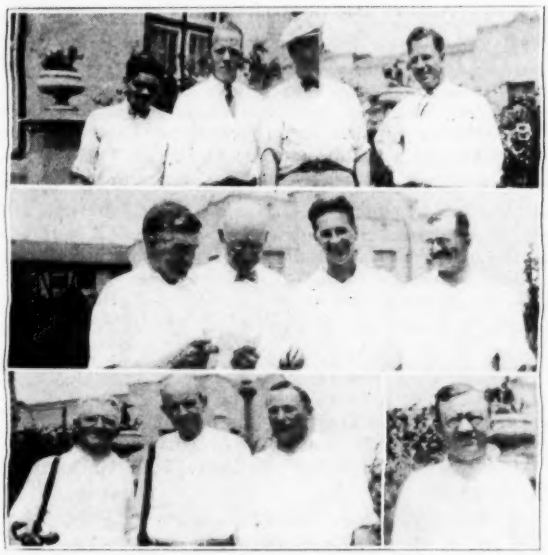
Silver Cup Winner—Carl Frey.

Duffers' Cup Winner—Peter O'Neill.

Foursome Winners—Rowland, Singer, Bailey, Kunde, Wills, McCune, Snively, Harte, Bryar and Vance.

WESTERN TRADE AND PLUMBING CONTRACTORS' ASSOCIATIONS HAVE BIG GOLF DAY

The plumbing, heating and ventilating industries of Chicago were on the golf links, July 12, when the Western Trade Golf Association and the Plumbing Contractors' Association of Chicago combined their July tournaments to make one big golf event. One hundred and forty golfers teed off the No. 3 course of Olympia Fields Country Club, playing a nine-hole morning qualifying round and an afternoon eighteen-hole handicap match. There was no idea of a contest between the two organizations, members of each association dividing the numerous prizes equally



Top picture: E. C. O'Connor, E. H. Christiansen, T. H. Monaghan and A. E. Norman, Jr.—Middle row: H. G. Thomas, James Doherty, W. G. Zingheim and E. E. Bolte.—Bottom row: August Nilson, Judge Harry Olson, R. B. Reedy and Elmer J. Sanger.—Photos taken at the recent combined golf meet of the Western Trade Golf Association and the Plumbing Contractors' Association of Chicago

For the Plumber!
Profit on the water system itself
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Profit on the installation
Running water is a profitable business. There's a profit in the sale of a water system—a profit in the sale of sinks, washbowls, bathtubs and other bathroom equipment—a profit from the piping and installation of the system and fixtures.
On the outskirts of your town, where the water supply ends, you'll find live prospects for Goulds Autowater Systems. These prospects can be turned into actual customers for Goulds Autowater Systems. Show them "how it works," with an Autowater Demonstrator, and explain to them the
8 Exclusive Features found in Goulds Pumps
Automatic Oiling Pump—Requires oiling once in two or three months.
Outside Packed Plunger—Easy to repack without taking pumps apart.
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Air and Vacuum Chambers: extra large.
Floating Belt Tightener: instead of spring tension type.
Illustration at the left is the popular 'X-210 Outfit, complete in one unit, ready for use. Electric motor driven. Capacity, 210 gallons per hour.
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Please send me a copy of your Catalog "Water for the Home."
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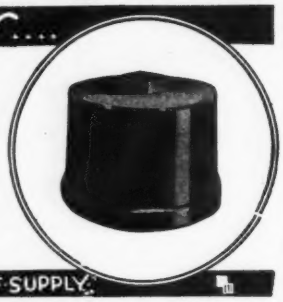

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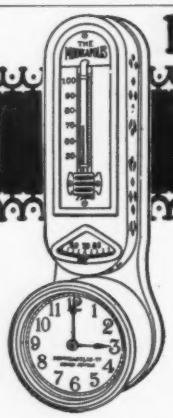

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Backed by Nation-Wide field organizations without equal in the industry.

Write for the Minneapolis proposition.

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and enjoying excellent sport together at this joint tournament.

The evening meal climaxed the day's activities. It was then that the golfers who kept out of the traps and kept down their scores were awarded their prizes. H. P. Reger, chairman of the golf committee of the Plumbing Contractors' Association, and Frank B. Hackett, president of the Western Trade Golf Association, presided jointly over the big meeting and made the awarding of prizes an occasion for considerable fun.

For each event, and in each class, there were two prizes, one for a plumbing contractor and one for a member of the Western Trade Golf Association. H. P. Reger won the morning qualifying round in the contractors' division, for which victory he received a pocket flask. F. McCartin topped the Western Trade players in the morning, and won a matched driver and brassie.

In the afternoon R. B. Reedy shot a pretty game to lead the contractors in Class A. His prize was a duffle bag. A. G. Peterson was second in this class. He was given a cigarette holder. Among the Western Trade players, J. P. Kiely and E. H. Christiansen tied for first honors in Class A. The association cup, beside the individual prizes, was at stake, and J. P. Kiely won the toss-off. He, therefore, will have the association cup for a month, and his victory also won him a zipper bag. Mr. Christiansen received a pair of golf hose for his good shooting.

In Class B, first prize among the contractors was won by E. Stevenson, a golf sweater being the award. J. J. O'Shea was runner-up and he received a cigar-lighter. A. P. Campbell was best in his class in the Western Trade division, winning the Class B prize of a sweater and hose set for first place. J. A. Cutler was second. He won a sweater.

A. Nilson won first in Class C, in the contractors' division. His prize was a patented coat hanger. C. W. Alcock was runner-up, winning a thermo-dial. The Western Trade Class C players were topped by Geo. H. Dickerson, with Thos. H. Monaghan, vice president of the association, second. A sweater and knickers were the respective prizes.

H. M. Sedgwick won the guest prize awarded by the Plumbing Contractors' Association. It was a cigarette holder. T. J. Welch was the winning Western Trade guest, receiving the association watch fob.

E. C. Wagner covered himself with glory by winning the brown derby, an honor awarded to the plumbing contractor for the highest number of strokes. The Western Trade Golf Association's duffers' cup was won by W. F. McCarthy.

Two blind bogey prizes were awarded. W. N. Pincus won the blind bogey in the Western Trade division and J. S. McKenzie in the contractors' division. A golf bag was the first prize and six golf balls the other.

Flight winners were G. H. Dickerson, C. E. Crone, R. B. Stiles, H. M. Sedgwick, L. R. Taylor, W. J. Hajek, J. J. O'Shea, A. Nilson, W. E. Foskett, J. H. Milliken, H. G. Thomas, F. H. Gaylord, G. H. Mooney, J. S. McKenzie, E. E. Ellis, C. A. Scholz, R. B. Reedy, C. W. Alcock, E. Fahlstrom, C. E. Barrows, J. J. Flavin, C. F. Olsen, J. Silhanek, E. H. Christiansen, E. M. Tennant, J. A. Cutler, A. R. Wagner, A. P. Campbell, Roy Hickey, G. E. Egan, J. A. Cook, C. A. Baldwin, F. McCartin, F. B. Hackett and Cliff Presdee.

M. T. G. A. PLAYS IN POOR WEATHER

Clarence McSorley carried out his promise made when he invited the members of the Michigan Trade Golf Association to be his guests at Brooklands Country Club, near Detroit, Mich.; plenty of water and flooded brooks accompanied the 37 members and guests, as a result of heavy rains when they played golf there, Tuesday, July 12.

First prize was won by Mr. Daly of the American Radiator Co., with a net of 67 and a handicap of 20. Mr. Parrock of the Pittelkow Heating & Engineering Co., was compelled to cut cards with Mr. Daly as he likewise had a net of 67 and a handicap of 36. Mr. Daly won the cut, which carried with it the Plumbers' Trade Journal cup, while Mr. Parrock won next prize, which was a pair of golf socks donated by Charles Soderberg.

Kicker prizes were donated by Carter Sales and won by R. E. Cramsie, a guest of the association. Second prize was won by C. A. Buck and third kickers' prize won by S. Hetzell, both being guests; first prize was won by R. E. Daly.

SOUTHWESTERN TRADE GOLFERS PLAY AT ST. ANDREWS

St. Andrews Golf Club, near Kansas City, Mo., was the scene Thursday, July 14, of the July meet of the Southwestern Trade Golf Association. A good crowd teed off for the golf, and at the end of the eighteen holes the members repaired to the Meadow Lake Golf Club, where dinner was served, with Carl Smith as host.

First prize for the day's golf, a pair of golf shoes, was won by W. O. Widner, with a score of gross 90, handicap 25, net 65. J. T. Thurman obtained a net 69 by virtue of his gross 94 and handicap of 25. He was awarded a spoon. B. F. Stegman shot a 95, which with his handicap of 25 brought his net to 70, and third prize, 12 golf balls. Carl Smith was awarded a pair of golf socks for having made the greatest number of par holes, 7. I. L. Roark won the five blind holes with a score of 23, and received a pair of golf hose. A putting disc was given to T. E. English for his high gross, a 124. The largest score on one hole was accomplished by N. Downes when he took an 11. He was awarded a putting disc for his efforts. F. O. Piepenbring won the attendance prize. The next meet will be held at Lakewood, July 28.

Top row: George Foley; William J. Hebenstreet; George Jorgensen.—Middle row: R. E. Bidwell; I. L. Roark, handicapper; D. H. Painter.—Bottom row: J. E. Ellis; Carl Smith; E. A. Cline, secretary-treasurer

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Climax Cellar Drainers will appeal to every housewife who has to depend upon the basement as a place for doing any of her work.

The Climax, in eliminating the possibility of floods, eliminates too, the unhealthy conditions arising out of the damp, wet basement.

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LOW PRESSURE AEROFIN Vacuum to 50 lbs. gauge steam Tube-Plate Construction

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Encased Units, installed quickly and cheaply

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25 to 350 lbs. gauge steam Continuous Seamless Tubes

HIGH PRESSURE AEROFIN

Personal Mention

Mitchell S. Little, president and a director of the M. S. Little Mfg. Co., Hartford, Conn., was recently elected a director of the Hartford Gas Light Co. Mr. Little has many business interests, being president and a director of the Sigourney Tool Company and the Smyth Mfg. Co. of Hartford. He is also a director of the Whitlock Coil Pipe Co., and the Billings & Spencer Co. of Hartford.

James A. Messer, president of the James A. Messer Co., Inc., Washington, D. C., accompanied by Mrs. Messer, arrived last week on the S.S. Majestic from an extended tour of Great Britain, France, Holland, Belgium, Switzerland and the Italian Lakes. Mr. Messer looked the picture of health and was glad to be back in this country. He reported conditions in Europe greatly improved since his visit there three years ago, particularly in England and Scotland.

R. M. Nelson

R. M. Nelson, vice president of the Sloan Valve Co., Chicago, has been made general manager of the entire organization. Mr. Nelson, who formerly acted as sales manager, has been associated with the Sloan Valve Co. for nearly twenty years, and has been largely responsible for the progress of this concern.

George Edw. Egan, for the last four and one-half years in the Chicago office of Waterbury Mfg. Co., Waterbury, Conn., as a salesman, has been appointed manager of the company's Boston office, at 419 Dee street in that city. Mr. Egan left Chicago last week to take up his new duties. He has been with Waterbury Mfg. Co. for 17 years.

Arthur Gould, sales manager of the Oster Mfg. Co., Cleveland, Ohio, is taking an automobile tour as his annual vacation. He accompanied Don Wood, assistant sales manager, and Harold Thompson, New York representative of the company, to the recent outing of the Heating Engineers' Association, Inc., of Brooklyn, N. Y.

A. B. Weil, of the Fletcher-Weil Co., 1921 East Seventh street, Los Angeles, Calif., has just returned from an extensive business tour of the East. He announces that his company will be Coast representatives for the Apollo Metal Works, LaSalle, Ill., and for E. P. Rugg Co., Newark, Ohio. It also will act as California representative for the Republic Brass Co., of Cleveland, Ohio.

Henry Reis, general sales manager of W. A. Russell & Co., New York City, accompanied by Mrs. Reis, is spending a few weeks at Ocean City summer resort.

Harry R. Myers, well known to the trade in the Eastern district, has returned to the American Radiator Co., with whom he was associated for many years. Mr. Myers recently resigned his position as manager of the Philadelphia branch of the Tomlinson Co. He will be located at the American Radiator Co.'s main office at 40 West Forty-first street, New York City.

H. G. Morrow, general manager of sales for the Central Tube Co., Pittsburgh, recently spent a few days in Philadelphia, calling on the wholesale trade with **H. J. Kleinman,** the concern's representative in that territory.

C. P. Ninekirk, of the Oakland, Calif., branch of Crane Co., has recently returned from a month spent at the company's factory in Chicago.

New Trade Literature

"Water for the Home"

Goulds Pumps, Inc., of Seneca Falls, N. Y., has just issued its Catalog 15, "Water for the Home," which discusses autowater systems for city, suburban and farm use. The catalog consists of thirty-two pages printed on highly glazed paper, with numerous illustrations of the company's various water systems. Methods of installing shallow well systems and deep well systems are shown.

"High Winds, Cold Days"

A circular with the caption, "High winds, cold days, yet little fire-tending needed," is being distributed by Pacific Steel Boiler Corporation of Illinois, Waukegan, Ill. The folder contains a copy of a letter from a satisfied user of the company's boiler.

"Medicine Cabinets"

Universal Cabinet Co., of Chicago, has issued Supplement No. 25, listing medicine cabinets (recessed and plain), dressing toilets, bathroom stools, blacking cases, art mirrors, etc. Many styles of cabinets, as well as many kinds of finishes are illustrated.

Excelso Products Corporation's Folder

Another of the pamphlets which the Excelso Products Corp., of Buffalo, N. Y., issues frequently to the trade, has just been released. This latest folder tells in a concise manner the story of the company's heaters. It is well illustrated with photographs of typical installations.

Powers Regulator Co.'s Bulletin

The Powers Regulator Co., Chicago, recently issued a folder showing a few of the many different types of regulators made by that company to control temperature. Included in the bulletin are photographs of tank thermometers, regulators for hot water tank heaters and garbage burners, thermostatic water controllers, shower mixing valves, high pressure thermostatic steam traps and steam and water mixers. Many of the items are further described by means of detailed cross sectional drawings showing the operating principles.

Stark Pump Co.'s Folder

Stark Pump Co., of Detroit, Mich., is distributing a folder with the caption "Stark Automatic Electric Basement Drainer Protects Your Home." Two illustrations are given, one showing a flooded basement and the other a scene a short time later, when the basement has been drained and is used as a playroom. The operation of the strainer is described.

Sinks in New Designs

A booklet printed on highly glazed paper and illustrated with attractive illustrations in several colors has just been published by the Standard Sanitary Mfg. Co., of Pittsburgh, Pa. Several styles of double drainboard sinks and sanitary garbage containers, as well as a faucet with soap-dish attached, are featured.

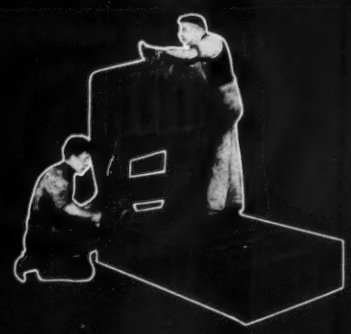
Hamburg Boiler Works' Leaflet

Hamburg Boiler Works, Inc., of Hamburg, Pa., is distributing a leaflet illustrating its vertical tubular boiler. Technical descriptions, instructions for installing vertical boilers and a page of specifications are comprised in the leaflet.

Catalog of J. H. Williams & Co.

A new edition of the catalog of J. H. Williams & Co., of Buffalo, N. Y., has recently been issued in pocket form. A section has been added showing the company's line of wrenches. The catalog also contains information about new finishes for drop-forged wrenches of carbon steel, and about the company's line of tongs.

Burnham Boilers



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MR. BURNHAM'S hard-headed practicalness is built into every inch of his boilers. Because they are so thoroughly practical; they are also unfailingly economical.

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Irvington, New York

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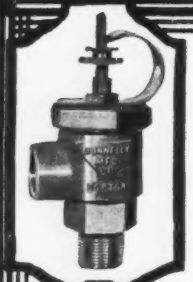

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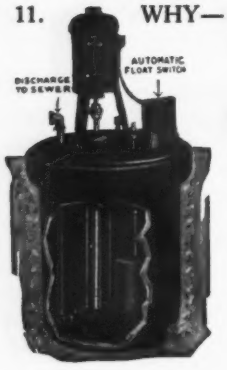

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Leader Iron Works Folder

The Leader Iron Works, of Decatur, Ill., has just issued a folder describing its line of steel hot water and steam heating boilers. The folder contains a number of photographs of the different types of boilers made by the company. There is also a cross sectional view of a boiler, showing the path taken by the gases after combustion takes place.

Shower Doors and Shields

Crist & Schilken Company, of Pittsburgh, Pa., has issued its Catalog B with the title "Shower Doors and Shields." The catalog consists of twenty-four pages, 8½ by 11 inches, printed on highly glazed paper. It describes shower stall doors and shower bath shields of various kinds. There are numerous illustrations of stall doors with glass panels, and four full page blueprints giving plans and elevations.

CONVENTION DATES

August 9, 10 and 11, 1927.—The annual meeting of the American Society of Sanitary Engineering, at Jacksonville, Fla.

September 28, 1927.—Tentative date of meeting of Advisory Committee on Vitreous China Plumbing Fixtures, Department of Commerce building, Washington, D. C.

Coming Trade Events

July 23, 1927.—The annual outing of the Mahoning Valley Master Plumbers' Association, at Pioneer Pavilion, Mill Creek Park, Youngstown, Ohio.

July 27, 1927.—Clambake and athletic meet of the Fairfield County Master Plumbers' Association, Inc., to be held at Woodside Park, Stamford, Conn.

July 27, 1927.—The annual outing of the Master Plumbers' Association of Rochester, N. Y., at Ampor Beach, Hilton, N. Y.

July 27, 1927.—The annual outing of the Master Plumbers' Association of Washington, D. C., at Chapel Point, Md.

July 28, 1927.—The second annual stag picnic of the Southeastern Ohio Master Plumbers' Association.

July 30, 1927.—The first clambake and outing of the Women's Auxiliary to the Massachusetts State Association of Master Plumbers, at Narragansett Heights, Portsmouth, R. I.

August 6, 1927.—The annual outing of the South Bergen County Master Plumbers' Association, at Kline's Grove, Oakland, N. J.

HERE ARE THE ANSWERS

(Questions will be found on page 15)

1.—C. C. Pyke of Lafayette, Ind., president of the Indiana Society of Sanitary Engineers.

2.—A bathtub used by Queen Victoria.

3.—The question of two additional tappings on the side.

4.—The Massachusetts State Auxiliary, which affiliated in 1923.

5.—1,365,275.

6.—From the Latin "plumbarius" meaning a worker in lead.

August 6, 1927.—The annual outing and Heating Association of Norfolk, Va.

August 11, 1927.—August tournament of Western Trade Golf Association at Westward Ho Country Club.

August 11, 1927.—The annual outing of the Harrisburg (Pa.) Master Plumbers' Association at the West End Republican Club home on the First Mountain.

August 23, 1927.—The annual outing of Maryland Master Plumbers' Association.

September 8, 1927.—September tournament of Western Trade Golf Association at Glen Flora Country Club, Waukegan, Ill.

September 10, 1927.—The annual outing of the Master Plumbers' Association of Jersey City, N. J., to be held at Blasberg's Farm, Hawthorne, N. J.

September 21, 1927.—Joint tournament of Western Trade Golf Association and Michigan Trade Golf Association, at Battle Creek Country Club, Battle Creek, Mich.

October 7, 1927.—Last tournament of season of the Western Trade Golf Association, at Calumet Country Club.

THE TRADE

WITH MASTER PLUMBERS AND HEATING CONTRACTORS

BROOKLYN HEATING ENGINEERS HOLD SPRIGHTLY OUTING

The Heating Engineers' Association, Inc., of Brooklyn, N. Y., has held a successful outing each year for a great many years. These years of experience have combined to teach the committees the proper things to do to make the affairs interesting and enjoyable. The 1927 affair, held July 14, at Karatsonyi's, on the south shore of Long Island, was no exception to the general rule, the committee headed by Charles Bender having made plans that assured an eventful day.

The 175 heating contractors and their guests motored to the scene, leaving in a long cavalcade of automobiles for the drive. After arriving, breakfast was served and the group assembled for a big picture before proceeding to the sports of the day.

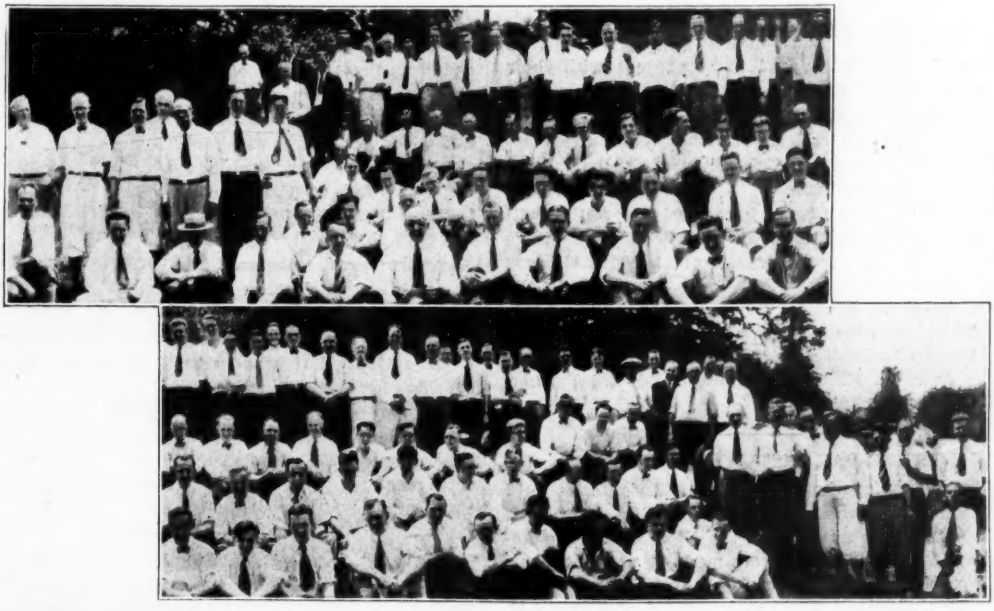
The salesmen's team, made up of Gilmour, second base; Kent, left field; Peterson, shortstop; Foster, first base; O'Connell, right field; Merchant, catcher; Corwin, third base; Schmidt, center field, and Meyerdick and Shaff, pitchers, being captained by Jones, took the contractors into camp in the seven-inning baseball game by a 15-7 score. The contractors' team was made up of Captain Blest, Catcher Kent, Shortstop Larroway, Centerfielder Lieblang, Second Baseman Dawson, Leftfielder Musaus, Pitcher Moore, First Baseman E. Crutchley, Third Baseman B. Crutchley and Rightfielder Sharp. Umpires were President A. L. Dovel and Mr. Clark.

Pitcher Shaff, who works for the Republic Pipe & Iron Co. when he isn't attending outings, cleaned up on the barrel throw, his training in control of a baseball standing him in good stead. A moment later, George P. Lutz, of A. C. Lieblang, had proved his superiority with a mashie niblick, approaching closer to a stake than any of his competitors. George Foster, of the Bryant Gas Boiler Co., is always a close competitor for honors in the shot put. This year he won the affair. The sack race was a tough one, with several preliminaries preceding the main event. F. A. Crutchley showed rare form, winning his heat and the final.

The potato race attracted ten fleet-footed entries, the tenth man entering, K. F. Bowkett, of the National Tube Co., running off with first prize. A minute later there were two rows of serious looking contestants attempting to eat three graham crackers and then whistle. George P. Lutz can eat as well as he can approach, the judges decided, as he was the first to emit a feeble whistle after the ordeal.

The crowd then adjourned to the water's edge, where the funniest race of the day was staged. Clad in bathing suits, and swimming in heats, the contestants were sent off for swimming races wearing high hats and carrying opened umbrellas. K. E. Pote, of the Fitzgibbons Boiler Co., won his heat and the final, and Bert Crutchley took second in the final after successfully leading his division.

The excellent shore dinner which topped off the day was enlivened by the awarding of the prizes to the successful contestants, as well as gifts available to contractors only which had been donated by Crane Co., B. F. Gilmour Co., W. A. Case & Son Mfg. Co., Good Manufacturing Co.,



Members and guests of the Heating Engineers' Association, Inc., of Brooklyn at its annual outing

Union Radiator Co., Hoffman Specialty Co., Oster Mfg. Co., John Kelly, Walworth Co., and J. A. Sexauer Mfg. Co. In addition, brief talks were made by President A. W. Dovel, National Secretary Henry B. Gombers, and W. E. Taylor, introduced as the "Czar of the heating trades of Greater New York."

OAKLAND-BERKELEY-ALAMEDA MASTERS ELECT OFFICERS FOR NEW FISCAL YEAR

At the meeting of the Oakland-Berkeley-Alameda Master Plumbers' Association, held at its headquarters, 538 Twenty-fourth street, Oakland, on Monday, July 11, the annual election was held and resulted as follows:

W. H. Picard was elected president for the third term; Dwight W. Durant was chosen vice president; V. A. Edgeworth was again selected business manager; J. B. Morse will act as secretary for the twelfth term; A. H. McKown is embarking on his twenty-first year as treasurer; Joseph A. Freitas was elected to the post of sergeant-at-arms.

ASSOCIATIONS PLAN ANNUAL OUTINGS

The annual outing and games of the Master Plumbers' Association of Jersey City, N. J., will be held at Blasberg's Farm, Hawthorne, N. J., which is just north of Paterson, on Saturday, September 10. Guests of the day will be transported in automobiles furnished by the association, which will leave Bergen Square, Jersey City, at 9:30 a. m. The committee, which is planning a day which will be enjoyable for all guests, both men and women, is made up of Louis S. Komoski, Henry A. Cohendet, James T. Brennan, Valentine Ringle, Richard Entwistle, John J. Corcoran, Joseph A. Sprouls, Charles Werner, Abraham M. Aronson, and William F. Bailey.

The Philadelphia Suburban Master Plumbers' Association will hold its annual picnic today, Saturday, July 23, at Rutherford Farm, on the State Road at Darby Creek, Springfield, Pa., it is announced by A. C. Wilson, secretary, and E. N. Sharp, president. The committee, which is made up of David Sanderson, Melvern Dilks, P. H. Barrow, J. Bracken, W. Huebner, W. White, William Hughes, Charles Lucy, William Stranghan, E. N. Sharp, F. Mellon and A. C. Wilson, urges everyone to bring their families. A report of this outing will be published soon.

The second annual picnic of the Southeastern Ohio Master Plumbers' Association will be held Thursday, July 28. All those engaged directly or indirectly in the plumbing and heating industry are urged to be present with their guests. Those who come from an easterly direction will meet at 9 a. m. at the office of Bohn & Kern, South Third street, Zanesville, Ohio, and those coming from the West will meet at the same time at the shop of O. D. Hollars, Fourth street, Newark, Ohio.

The Harrisburg (Pa.) Master Plumbers' Association will hold its annual outing at the West End Republican Club's summer home on the First Mountain, north of Harrisburg, Thursday, August 11. Invitations have been sent to the Lancaster, Lebanon, Reading, Allentown and York Associations. The committee in charge includes Edward Schell, Robert Filson, Charles Grier, Guy Magara, M. H. Baker, Walter Ramsey, W. K. Brumbaugh and Edward Palmer. Edwin L. Fisher is chairman.

PLAN THREE-DAY INSTITUTE AT N. Y. U.

Tentative plans for the three-day institute to be held in connection with the College of Engineering, New York University, under the auspices of the New York State Association of Master Plumbers, were made at a recent meeting of the special committee which is considering the institute. The committee, which is composed of Stephen H. Welch, Bronx; Walter Heap, Richmond, and Thomas J. Whalen of Queens, and which was appointed by State President Martin W. Utz of Rochester, had the help of Dean Bliss and Professors Rowe and Cleverdon of the university at their session.

It is proposed to hold the institute some time before the end of the year, the exact dates to be named later. Plans include devoting the morning of the first day to registration and to opening addresses by Chancellor Brown of the university and Judge McKee, president of the New York City board of aldermen. The other five half days of the time allotted will be devoted to two lectures each, one and one-half hours being given for each subject and the ensuing discussion. A banquet will be held at the close of the institute, if present plans are carried out.

The subjects suggested for discussion are:

1. Applications of chemistry to practical plumbing problems.
2. Bacteriology and its relation to practical plumbing problems. (Chlorination, violet rays and filtration will be discussed.)
3. The water supply of buildings, including piping, tanks, pumps, etc.
4. Sprinkler systems, standpipes and other fire-fighting equipment.
5. Rural water supply and independent plants.
6. Hot water supplies—methods of heating.
7. The one-pipe steam heating system for residences.
8. Methods of sewage disposal and sewage treatment.
9. Oxy-acetylene welding.
10. Commercial law applied to plumbing and heating work.

TRENTON ASSOCIATION CUTS MEETINGS

Due to the hot weather, the Master Plumbers' Association of Trenton, N. J., will cut down its number of monthly meetings to two, instead of the weekly meetings held during the major portion of the year. During July and August, it has been decided, the association will meet on the first and third Wednesdays of the month.

PARLEY B. BURT CALLED BY DEATH

Parley B. Burt

Parley B. Burt, Springville, Utah, master plumber and president of the Utah County Association of Sanitary and Heating Engineers, dropped dead on the morning of the day on which his wife's funeral was to have been held, and a double funeral was held two days later. Mr. Burt had been engaged in the plumbing business in Springville for the past eight years. He was an active association member. In addition to having been recently elected the chief executive of the Utah County organization, he was also serving his second term as a member of the board of governors of the Utah State Association of Sanitary and Heating Engineers. The funeral was well attended by Utah County and Salt Lake City masters. Mr. and Mrs. Burt are survived by five children.

Newberry, S. C.—S. F. Floyd, 409 Falls street, Greenville, has the plumbing contract in the erection of the Bush River Consolidated high school for Newberry County.

Building News

An unusually large number of reports of larger building operations have been reported during the past week, the majority, perhaps, being from the Pacific Coast. Recent building permits also bear out the fact that the building industry is picking up in that part of the country, after a brief recession in past years. New England and other sections are also represented among the large project items this week.

Boston, Mass.—The first petition to be presented for the consideration of the 1928 legislature, which meets the first week in January, was filed on July 5. It seeks to allow the City of Boston to construct a $5,000,000 municipal auditorium. It would authorize the city to borrow money outside the debt limit and have the auditorium ready for the three-hundredth anniversary of the founding of Boston in 1930.

Long Beach, Calif.—The Ford Motor Co. will erect a $5,000,000 assembling plant in this city, to be located on Cerritos Channel. The plant will consist of a one-story main building, 928x390 ft.; a two-story office building, 104x80 ft.; a warehouse, 440x80 ft.; a power-house, 98x80 ft., and minor buildings.

San Francisco, Calif.—Working drawings are being prepared covering construction of the $4,000,000 opera house to be situated on the block bounded by Van Ness avenue, Gough, Franklin and Fulton streets. It will have a seating capacity of 4,100. Bakewell & Brown and G. Albert Lansberg, 251 Kearny street, are the architects. As bonds providing for this work were voted only last month, it will be some time before plans will be ready for bids.

Sacramento, Calif.—Involving a total of $4,687,000, the building program for the State of California for the next two years includes the following new construction work: East wing at San Quentin prison, $260,000; three structures at Stockton for the hospital farm, to accommodate 360 patients, $250,000; two ward buildings at Norwalk, to accommodate 240 patients, $175,000; machinery building at State Fair Grounds, $100,000; two new buildings at Folsom State prison, $153,000; hospital and receiving unit for the Preston Industrial school, $100,000; patients' cottages at the Stockton State hospital, $250,000; various buildings at the Mendicino State hospital, $200,000.

Belvedere, Calif.—The B. F. Goodrich Rubber Co., Akron, Ohio, has awarded a contract to the Foundation Co. of New York for the construction of a plant to cost between $4,000,000 and $5,000,000. The main building will be five stories high, approximately 1,200 ft. long, by 250 ft. wide.

Houston, Tex.—The Houston Lighting & Power Co. will construct a $3,000,000 warehouse. Plans are now being made.

San Francisco, Calif.—Plans are being prepared covering the construction of a 22-story, Class A, hotel and store building at Sutter and Powell streets, at a cost of $2,000,000. The hotel will contain 500 rooms and baths, and will be one of the most modern hostelries on the Pacific Coast. Weeks & Day, Financial Center building, are the architects.

Los Angeles, Calif.—Preliminary plans have been completed covering the erection of a 13-story, 396-room, Class A hotel building to be situated at 240-248 South Spring street. The structure will cost approximately $1,500,000. F. L. Johns, 603 Lissner building, is the architect.

San Francisco, Calif.—Bids will be called shortly for work on the proposed $1,600,000 theater to be situated on the block bounded by Market, Hayes, Larkin and Polk

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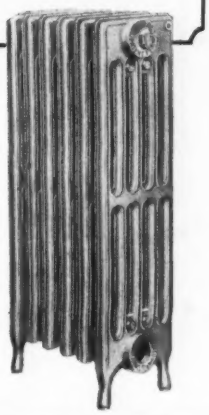
Window radiators and standard heights in three-, five- and seven-tube sizes.



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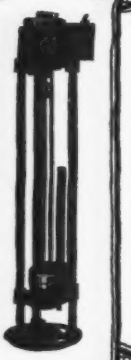

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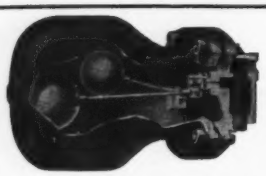

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streets, for the Capital Co. The structure will have a seating capacity of 5,200. It is understood the theater will be leased to the Fox Film Co. The engineer in charge is H. L. Nishkain, Underwood building.

Moraga, Calif.—Construction will start shortly on the $1,500,000 group of 14 steel and concrete college buildings for St. Mary's College.

Harlingen, Tex.—A. L. Lewis has plans for a $1,200,000 12-story hotel building on the corner of Monroe and First streets, the first four stories to be occupied by a department store.

Portland, Ore.—The Rose Holding Co. has been incorporated for $2,500,000, by N. W. Howard, S. R. Roth and E. B. Seabrook, for the purpose of building and operating hotels and apartment houses. The first project to be sponsored by the new company is the 28-story apartment hotel to be built on the site of the old Ladd school, which ground the school board sold to Mr. Howard over a year ago. L. L. Dougan, architect in the Kraemer building, is rushing plans for this first building. He is assisted by E. A. Miller, also in the same building. It is expected that plans will be ready in about 40 days. This projected apartment will be ultra-modern and will be among the finest in the country.

Medford, Mass.—On recommendation of Mayor Larkin and the board of aldermen, an appropriation of $100,000 will be raised out of taxation this year to start the work of building the addition to the high school and to the Osgood elementary school house in the Wellington district. The money is needed to support a bond issue of $700,000 outside the city's debt limit, which has been authorized by the state legislature. The estimated cost of the high school is said to be about $900,000, and that of the Osgood school addition to be approximately $100,000.

Bridgeport, Conn.—Bids are now being received for the ten-story bank building to be built at Main and John streets for the City National Bank at a cost of $900,000. Dennison & Hirons, 40 East Forty-ninth street, New York, are the architects, and Ernest G. Southey, 983 Broad street, is associate architect for the structure, which will be of brick, granite and terra cotta construction.

Newton Upper Falls, Mass.—One of the finest projects to be launched in the Boston section is seen in the proposed hospital units for the Newton hospital to be erected on Washington street. Architects Densmore, LeClear & Robins, 31 St. James avenue, Boston, have drawn plans for a five-story, brick and lime-stone structure with a basement and sub-basement to include a boiler house. Bids for the project, estimated to cost about $1,000,000, will close July 26, and the heating and plumbing figures will be received exclusive of the general contract.

Apartments and Hotels

San Jose, Calif.—Plans are about ready for bids covering work on the $100,000, four-story, concrete hotel building on South First street, to contain 70 rooms. Binder & Curtis, West San Carlos street, are the architects.

San Diego, Calif.—The Pickwick Stage Corp. will erect a large addition to its present terminal in this city. The building will be an eight-story structure and will provide added space for guest rooms. The cost will be approximately $600,000.

Salt Lake City, Utah—A. H. Higham has been awarded the plumbing and heating contracts on the Union Pacific Railway Co.'s dormitory at the west entrance to the Yellowstone National Park.

San Francisco, Calif.—Plans are being completed covering a $600,000, 14-story and basement, steel and concrete

apartment building, to contain 22 apartments, which will be situated at the corner of Union and Leavenworth streets. Reid Brothers, 105 Montgomery street, are the architects.

Glendale, Calif.—Plans have been prepared by Architect R. N. Lamertt, 4073 Beverly boulevard, for a five-story hotel building to be erected on Central avenue, near Kenneth road. The structure will contain 166 rooms with bath, besides shops, lobbies and the customary service accommodations.

Los Angeles, Calif.—Preliminary plans have been completed covering a five-story, 488-room, Class B hotel to cost $500,000. It will be situated on Highland avenue near Sunset boulevard. W. E. Chadwick, Union League building, is the architect.

Brownwood, Tex.—Tom Posey is having plans prepared for the construction of a five-story hotel, 150x200 ft., to have 150 rooms with bath, to cost $300,000. Construction will be of brick and reinforced concrete. Anton F. Korn of Dallas is the architect and B. M. Morgan of San Angelo is associate architect.

Buffalo, N. Y.—E. W. Leeder will erect a brick apartment house at 2104-06 Delaware avenue, to cost $190,000. The building will be three stories and have 18 apartments.

Temple, Tex.—Dr. A. C. Scott will let the contract within a few weeks for a 14-story $300,000 hotel building on Main and Barton streets.

Milwaukee, Wis.—Bids are being taken for an apartment building to be erected by the J. H. Pessin Co.

Milwaukee, Wis.—The R. J. H. Realty Co. is ready to receive bids for an apartment building to be erected here.

Rochester, N. Y.—Plans have been filed by Joseph Joroslow, 172 Meigs avenue, for the erection of an apartment house at East avenue, between Strathallan Park and North Goodman streets. The building as planned will cost $400,000.

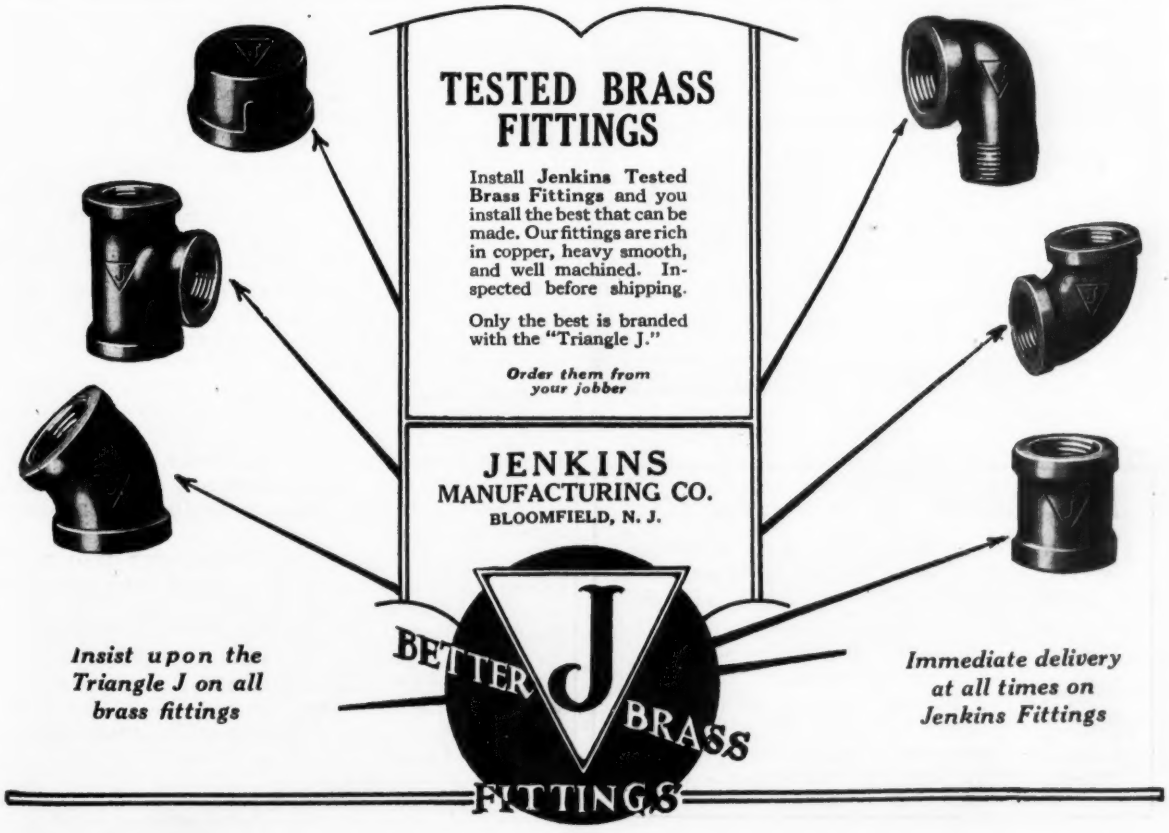
Some of the ladies in attendance at the recent convention of the Louisiana-Mississippi association

Milwaukee, Wis.—Bids are being taken for an apartment, store and office building to be erected by Louis Shapiro.

Palm Springs, Calif.—Plans have been completed by Architects Walker & Eisen, 1117 Western Pacific building, Los Angeles, for the erection of a $750,000 hotel on Indian avenue. The proposed building will be two stories in height, will have 200 guest rooms, a dining room to seat 500, as well as a swimming pool and golf links.

Long Beach, Calif.—F. L. Torge is taking bids for a proposed hotel building to be erected on Pacific avenue.

Los Angeles, Calif.—Contract for the erection of a 13-story hotel building at Sixth and Loomis streets has been awarded to Arthur Bard & Co., 315 West Ninth street. The site and building will have an appraised value of $776,000.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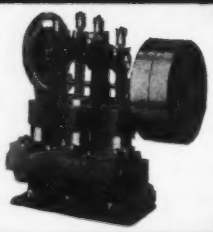

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DOMESTIC ENGINEERING, 1900 Prairie Ave., Chicago

Duluth, Minn.—The Sher-Hendrickson Co., 24 East First street, has been awarded the plumbing and heating contracts on the three-story, 33x36 ft. addition to the Arrowhead hotel at Second street and First avenue West.

Minneapolis, Minn.—Ward S. Morse, who recently purchased the Leamington hotel at Tenth street and Third avenue South, will build a 12-story, 150-room addition to cost $500,000. An architect has not been selected.

Minneapolis, Minn.—The Hultgren Plumbing & Heating Co., 11 East Thirty-eighth street, has been awarded the plumbing and heating contract in the two-story, 40x145 ft. apartment building being built by Wilbur B. Tucker at Twenty-sixth street and Pleasant avenue. Perry E. Crosier, 915 New York Life building, is the architect.

St. Paul, Minn.—The Harris Bros. Plumbing Co., Inc., 1607 Selby avenue, has been awarded the plumbing and heating contract on two three-story, 45x108 ft. apartment buildings being built by the Cities Housing Corporation on Portland avenue, between Kent and Dale streets, at a cost of $60,000 each. Clifford T. McElroy, 100 North Seventh street, Minneapolis, is the architect.

Kansas City, Mo.—Thomas E. and D. D. Gardner, 7244 Washington street, have plans ready for a ten-story apartment hotel on the southeast corner of Armour boulevard and Robert Gillham road.

Clinton, Okla.—H. V. Coleman is having plans prepared for a $100,000 hotel building.

Ponca City, Okla.—The Jesus-Marie hotel is having plans prepared for a $500,000 addition.

St. Louis, Mo.—A. B. Boyet, Arcade building, has finished plans for a $500,000 apartment building for Block Brothers, 5617 Delmar boulevard.

Aberdeen, S. D.—Allerbe & Co., 692 Endicott building, St. Paul, Minn., is preparing plans for a $300,000 hotel, to be erected by A. L. Ward, 1216 North Main street.

Rochester, N. Y.—Plans for a five-story apartment house to be erected at 203 Oxford street, were filed with the building department recently. The estimated cost is $295,000. The building will be of steel and brick construction, and will contain forty-six apartments. Thompson, Holmes & Converse are the architects.

Racquette Lake, N. Y.—A new steam-heated hotel of 50 rooms, twenty-five of which will contain baths, will be built here, replacing the hotel destroyed by fire last fall. The building will be of hollow tile and stucco. T. E. Jackson, Utica, N. Y., is the architect.

Kamloops, B. C., Can.—Plans for the new community hotel are progressing satisfactorily in the office of Architect E. A. Brown and a call for bids on the plumbing and heating will go out soon.

Seattle, Wash.—The Austin & Kay Plumbing & Heating Co. has been awarded the plumbing, heating and sprinkler contracts by the Western Construction Co. for the new $850,000 Marlborough House apartments. The award approximates $50,000. E. W. Morrison is the architect and has planned a 12-story structure containing 92 five-room apartments.

Los Angeles, Calif.—John Hawley, 4067 West Third street, has recently closed his lease on the property at Seventh and Berendo streets, upon which he will erect a 12-story, Class A apartment house that will cost approximately $500,000.

Los Angeles, Calif.—Working drawings are being prepared covering an 11-story apartment building to be erected at the corner of Ivar and Franklin avenues, to cost $500,000. Leonard L. Jones, 445 Douglas building, is the architect.

Berkeley, Calif.—Coveney & Behrendt, 1605 Bonita ave-

nue, Oakland, were awarded the plumbing contract for the $185,000 building at Shattuck avenue, near Durant street.

San Francisco, Calif.—J. Gibbs, 1706 Geary street, has secured the plumbing contract, and M. J. Reeves, 959 Natoma street, the contract for heating, in connection with the $250,000, 130-room apartment house being erected at California and Gough streets.

Big Bear, Calif.—The Bear Valley Mountain Club will build a $175,000, three-story, Class B hotel and store building to contain 150 rooms and eight stores. A swimming pool is included in the plans. John V. Koester, 444 Petroleum building, Los Angeles, is the architect.

Klamath Falls, Ore.—Scott Plumbing & Electric Works, 2919 T street, Sacramento, Calif., secured the plumbing and heating contract on the three-story hotel and store building for this city, at a reported figure of $15,182.

Wollaston, Mass.—The Hub Construction Co. of Boston has been awarded a contract to erect an apartment building, with stores on the street floor, on Beale street, from plans prepared by Architect R. B. Whitten of Boston. Contract for the heating has been given to Frank Cassidy and for the plumbing to M. Pass & Co., both of Boston.

Greenfield, Mass.—The Weldon Hotel Corp., J. T. Sellew, manager, is receiving figures for an addition to the Weldon hotel on High street. Smith & Annabel, 145 State street, Springfield, are architects. The addition will be three stories, of first-class construction.

Springfield, Mass.—An apartment block containing 40 apartments will be built on Mattoon street, from plans by Architect Oscar W. McMahon.

Theaters

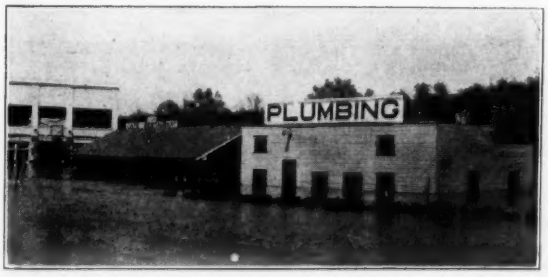
Chicopee, Mass.—The G. B. Construction Co., 98 Broadway, Springfield, has the heating contract for the proposed $300,000 theater soon to be started on Spring street for Goldstein Brothers.

Phoenix, Ariz.—Two new theaters are being planned for the immediate future. One is located at Second avenue and Adams street, while the other will rise at First and West Washington streets. The combined cost of the two structures will be $500,000.

Cincinnati, Ohio—The Henry Niemes Plumbing Co., 4112 Hamilton avenue, and the Reliance Heating Co. have been awarded the plumbing, ventilating and heating contracts for the Forest theater to be erected in Avonville, a suburb.

Mansfield, Ohio—The Midwest Properties Co. of Cleveland will erect a theater and commercial building of five stories, to cost about $300,000. Nicola Petti, Williamson building, Cleveland, is the architect.

Middletown, Ohio—Plans are under way here for the



The plumbing shop of Robert Crawford in Branson, Mo. The photograph was taken April 15, and shows the flooded condition resulting from the overflow of the White River

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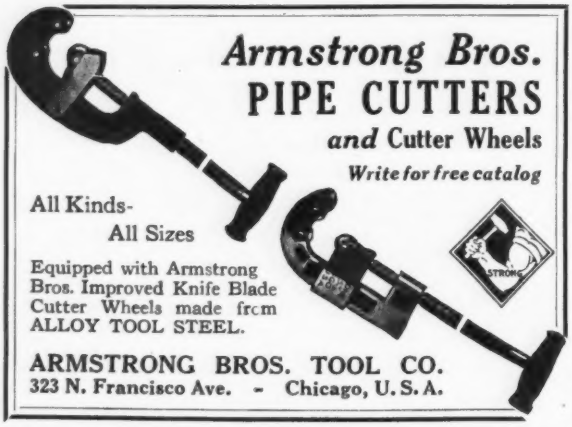

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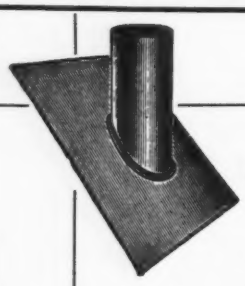

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Style R

Milwaukee, Wis.—Plans are being prepared by Architects Peacock & Frank, 445 Milwaukee street, for a theater building to be erected on Third street, between Clarke and Center streets.

Racine, Wis.—The plumbing contract for the theater and office building under construction here has been awarded to John Casper.

Racine, Wis.—Plans are near completion for a $200,000 theater and store building to be erected here. Law, Law & Potter of Madison are the architects.

Harlingen, Tex.—Plans are being drawn by Birger Elwing, architect, for the construction of a theater for the Valley Theaters, Inc., to cost $150,000.

Chicopee, Mass.—Contract for the heating has been awarded to the G. B. Construction Co. of Springfield, for the theater which Goldstein Brothers of Springfield plan to build on Spring street. Plans were prepared by Architects Blackall, Clapp & Whittemore of 31 West street, Boston. The same architects have prepared the plans for a theater to be built on Main street, Haverhill, for which the general contract has been awarded to Louis C. Cry of Lawrence, Mass.

Ventura, Calif.—New bids will soon be taken covering work on the $200,000 Ventura Theater building. In addition to the auditorium seating 1,500 people, the structure will contain a number of offices and hotel rooms.

Redlands, Calif.—West Coast Theaters, Inc., will commence work at an early date on their new $200,000 building at Cajon and Vine streets. L. A. Smith, Film Exchange building, Washington street and Vermont avenue, is the architect.

Portland, Ore.—A suburban theater and store building has been planned by Architect E. A. Miller, to be located at Milwaukie avenue and Powell street. Bids will be called shortly.

Racine, Wis.—John Feiner, Racine, has been awarded the plumbing contract and B. V. Reynolds the heating and ventilating contracts for a $500,000 theater and department store being erected here. United Scenic Studios of New York are the architects.

Astoria, Ore.—W. W. Lucius, architect in the Lewis building, Portland, is preparing plans for alterations on the Astoria theater to cost $200,000. He is working with G. C. Fields, staff architect for the Washington Theater Enterprise Corporation, which will operate the theater.

Oroville, Calif.—Working plans are now being prepared by Architects Miller & Pflueger, 580 Market street, San Francisco, covering construction of a $250,000 theater building for the West Coast Theaters, Inc. The auditorium will seat 1,500 persons.

St. Louis, Mo.—Plans are nearly complete for rebuilding the Odeon theater and office building at 1042 North Grand boulevard, at a cost of $100,000, Henri Chouteau, owner of the structure, has announced.

Group of Massachusetts master plumbers on the steps by the State House, Boston, taken at the annual convention of the Massachusetts state association, held recently in Boston

Clubs and Lodges

Rochester, N. Y.—The Seventeenth Ward Community League has incorporated and will erect a community building. United States Commissioner Cyrus W. Phillips is attorney for the corporation.

Cincinnati, Ohio—Howard Dorsey has secured the heating award on the Knights of Columbus clubhouse to be erected on the corner of Central Parkway and Race street.

Eau Claire, Wis.—The Bartingale Co. was low bidder on plumbing and heating, with a bid of $34,936, for the new Masonic temple to be erected.

Sturgeon Bay, Wis.—The A. J. Weist Co. has been awarded the plumbing and heating contract for the Masonic temple under construction by the Henry S. Baird Lodge.

Madison, Wis.—Architects Flad & Moulton of Madison are making final plans for a $175,000 clubhouse to be erected by the Madison Catholic Association.

Eugene, Ore.—Chase & Lesley were low bidders on plumbing and heating for the new Sigma Alpha Epsilon fraternity house.

Houston, Tex.—William A. Wilson, manager of the Y. M. C. A., is having plans prepared for the construction of an additional dormitory building to cost $300,000.

Williamstown, Mass.—W. N. O'Connor has been awarded the contract for the heating, and F. H. Sherman the plumbing contract for the addition which is to be erected to the fraternity house of the Zeta Psi fraternity at Williams College. The general contractor is Perry A. Smedley. The plans were prepared by May & Hillard, New York architects.

Seattle, Wash.—A building to be used as the Acacia fraternity house will soon be built. Architect William G. Mann and Consulting Engineers Stephen & Brust, Thompson building, are taking bids from a selected list of general contractors. Plumbing and heating bids will be considered separately.

Vancouver, B. C., Can.—The Quadra Club has announced that a contract has been let for the erection of a new clubhouse to cost $125,000.

Vermilion, S. D.—A. K. Richardson has been awarded the plumbing and heating contract in the new Masonic lodge building being built here. The contract amounts to $21,948.

Ames, Iowa—Bids will soon be received for the construction of a three-story fraternity house for the Sigma Alpha Epsilon fraternity. Kimball, Baillie & Cowgill, Engineering building, Ames, are the architects.

Beverly, Mass.—Beverly Masons are planning to build a Masonic Temple to take the place of the one destroyed by fire two years ago. A committee has been named to arrange for a mass meeting of the Masons of the city, to be held in a few weeks, at which it is expected plans for the proposed structure will be shown.

Worcester, Mass.—Architect John Belzerian, 339 Main street, has drawn plans for a brick and steel clubhouse and auditorium building to be built on Vernon street for the Lutheran Naturalization and Benefit Association. The building will be 50x115 ft., with two stories and a basement, estimated to cost $125,000.

Somerville, Mass.—Plans will be ready for bids shortly for the proposed Y. M. C. A. building to be built on Highland avenue at an estimated cost of $150,000. Walter Atherton, 15 Exchange street, Boston, is the architect.

New Orleans, La.—Diboll & Owen, Interstate Bank building, were selected as architects for the proposed

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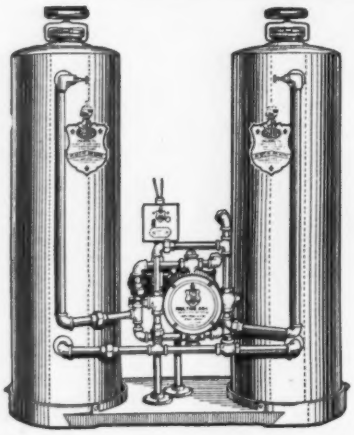

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$500,000 club building for which bonds have been voted by the Young Men's Gymnastic Club. If the sale of the present building can be arranged, the new building will be erected on a new site; if not, the present building will be razed and the new one erected at the old site, 224 North Rampart street.

Somers, Wis.—The Maple Crest Country Club has let the contract for its clubhouse to George Linderman, 4734 Fifth avenue, Kenosha, Wis.

Rochester, N. Y.—Plans for the erection of a recreation building by the Genesee Valley Club have been completed. The building will be equipped complete with bowling alleys, squash courts, shower and locker rooms.

Buffalo, N. Y.—Plans have been filed with the building commissioner for the erection of a new building by the Y. M. C. A. at 585 Michigan avenue, estimated to cost about $195,000.

Oil City, Pa.—The L. O. Bouquin Co. has been awarded the contract for the new addition to the Knights of Columbus clubhouse, which will cost about $90,000.

Charleston, S. C.—The heating and plumbing contract has been let to W. K. Prause, 178 King street, in the erection of the $120,000 building for Yeaman's hall.

Wewoka, Okla.—The Leslie Plumbing Co. of Holdenville has the plumbing contract in the erection of the $30,000 Masonic Temple.

Churches

Los Angeles, Calf.—A church to cost $200,000 is now under construction at Forty-third street and Normandie avenue for the St. Cecelia's Roman Catholic parish. Simultaneously a rectory contiguous to the church is being erected.

Charleston, W. Va.—The plumbing and heating contract has been let to the West Virginia Heating & Plumbing Co., Hale street, Charleston, in the erection of the $112,000 building at Beauregard and Washington street, Charleston, for the First Christian church.

Milwaukee, Wis.—Bids are being taken for a $110,000 addition to a church on Sherman boulevard and Center street, by Architects Velguth & Papenthien.

Pulaski, N. Y.—The First Methodist church is planning the building of a new addition to its church property, which will include Sunday school, dining room and recreational rooms.

Lowville, N. Y.—Charles A. Delin, Watertown, N. Y., contractor, has been awarded the contract for the building of the new church in this village for St. Peters Roman Catholic congregation. D. D. Kief, Watertown, is the architect.

Dallas, Tex.—The Highland Park Presbyterian church has preliminary plans for a $250,000 church, of which the $100,000 Sunday school will be the first unit. Mark Lemmon is the architect.

Columbia, Mo.—The Simon Construction Co. has the general contract for the $300,000 church and social center for the First Baptist church.

Racine, Wis.—Bids for a $125,000 church to be erected by the Holy Communion Lutheran church will be received by Architects Richter & Eiler, Reading, Pa., August 1.

Richmond Heights, Mo.—Rev. Jas. A. McMahon, 7232 Dale avenue, will take bids about August 1 on the construction of the $175,000 St. Luke's Catholic church.

Wichita Falls, Tex.—The Highland Park Christian church will call for bids soon on the construction of an English Gothic church of brick, tile, concrete and trim

stone, auditorium to seat 1,200, and to cost $250,000. Pate & Thompson, City National Bank building, are the architects.

Corpus Christi, Tex.—The First Christian church will ask for bids soon on the construction of a one-story addition to the church and a four-story Sunday school building. Ralph H. Cameron, City National Bank building, San Antonio, is the architect.

Houston, Tex.—St. Paul's Methodist church has selected Alfred C. Finn, Bankers' Mortgage building, as the architect to draw plans for a new edifice to cost $250,000.

Houston, Tex.—James R. Bailey, architect, is preparing plans for a Sunday school building for the First Methodist church to cost approximately $250,000.

Bude, Miss.—A committee made up of J. J. Newman, Dr. C. A. Everett and W. N. Tample, all of Bude, has been authorized to take charge of details and plans for a new Baptist church building.

New Orleans, La.—Revised plans are nearing completion by Emile Weil, Inc., Moise Goldstein and Weiss, Dreyfous & Seiferth, associate architects, for the proposed Temple Sinai synagogue to cost approximately $250,000, and bids will be called through the office of Emile Weil, Whitney Central building.

Bridgeport, Conn.—The Greek Orthodox church, of which C. A. Stateros is pastor, has recently completed negotiations for the purchase of land at Myrtle avenue and Prospect street. It is proposed to erect a new church and school on the site to cost probably around $150,000.

Springfield, Mass.—William P. Brown, 20½ East Court street, was awarded the heating and ventilating contract in connection with alterations to the South Congregational church at Maple and High streets. The contract is $17,000.

Los Angeles, Calif.—The First United Presbyterian church will construct a modern edifice at the corner of West and Washington boulevards at a cost of $250,000.

North Andover, Mass.—James P. Dwyer, Jr., 80 Boylston street, Boston, Mass., is the engineer for the heating and plumbing on the additions and alterations to St. Michael's Roman Catholic church. The plans were drawn by Architect William B. Colleary of Boston.

Medford, Mass.—Champion Brothers of 17 Thatcher street have been awarded the contract for the addition to be built to Grace Episcopal Parish House. The plans were prepared by Architect Charles B. Dunham of 1 Beacon street, Boston.

Binghamton, N. Y.—A new Catholic parish has been formed in this city by Bishop Curley. The Rev. Thomas J. Hannon has been appointed pastor. Plans call for a new church building to be started at once. Eight acres have been bought on Highland avenue.

An interesting farm pump display maintained by H. H. Armbrust of Anaheim, Calif., at a recent county fair

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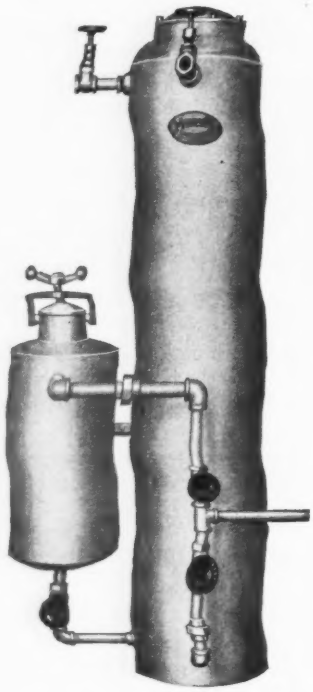

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Municipal and Government Work

Townsend, Mass.—*Charles G. Loring, 7 Water street, Boston, is drawing preliminary plans for a brick library building to be erected for the town.*

Platteville, Wis.—Bids for the municipal building to be erected here will be received about August 1. Final plans are now being made by Architects Law, Law & Potter, Madison.

Birmingham, Ala.—*The Culley Plumbing & Heating Co. has the heating contract and T. J. Reece has the plumbing contract in the erection of the New East Lake Library building.*

Burlington, Ky.—A warden's residence and jail will be built here for the Fiscal Court of Boone County. Plans are at the county clerk's office and at the office of C. C. and A. E. Weber, Ingalls building, Cincinnati, Ohio.

Southboro, Mass.—Preliminary plans are being drawn by Architect Charles M. Baker of 25 Arch street, Boston, Mass., for a new fire station to be erected by the town.

Lexington, Mass.—Plans have been completed by Architects Kilham, Hopkins & Greeley of Boston for a town building, to be erected on Massachusetts avenue. The R. D. Kimball Co. of 43 Milk street, Boston, has been retained as the heating and electric engineer.

Pittsfield, Mass.—Bids are being received by the County Commission for an addition to be erected to the courthouse on Wendell avenue, from plans drawn by Architect J. Arthur Vance of 24 North street. The estimated cost of the project is about $150,000.

Newburyport, Mass.—*A. M. Lundberg of St. Louis, Mo.,* is the general contractor for a new post office building which is being erected at the corner of Pleasant and Green streets. The supervising architect is James A. Wetmore.

Haverhill, Mass.—Bids have been closed for a new fire station and auxiliary building to be erected for the city of Haverhill, Public Building Department, under plans drawn by Architects Morse & Dickinson, 25 Washington street. Contracts are to be let forthwith.

Camden, Me.—Plans have been prepared by Architect Charles G. Loring of 7 Water street, Boston, Mass., for a public library building. The general contract has been awarded to W. E. Hatch and the heating and plumbing contract to A. H. Parsons.

Brookfield, Mass.—A contract will be awarded soon for a new fire house to be built according to the plans of William D. Thompson, Worcester architect. The building will be of brick and concrete construction and two stories in height.

Malden, Mass.—Bids are being received for the construction of a community building in Oak Grove Square for the city, according to plans of C. F. Springhall, architect of this city.

Wilbur, Nebr.—M. L. Evans, Brandies building, Hastings, is preparing plans for a court house to be erected here, to cost about $250,000.

Bowbells, N. D.—*Bids will be received by Ole J. Stompro, Burke county auditor, for the construction of a three-story court house to cost $125,000.* Toltz, King & Day, Inc., 13th floor, Builders' Exchange, St. Paul, Minn., are the architects and engineers.

St. Paul, Minn.—The Healy Plumbing & Heating Co., 278 West Fourth street, with a bid of $15,720, was the low bidder on installing steam heating plants in the state armories located at Windom, Appleton, Fairmont, Jackson and Long Prairie. P. C. Bettenberg, 418 Merchants' National Bank building, is the architect.

Lynn, Mass.—Reardon Brothers Co., 341 Union street.

have the plumbing and heating contract for the $200,000 school and city administration building on Franklin street. It amounts to $48,075.

Providence, R. I.—P. & J. Tierney, 520 Westminster street, have been awarded the contract for the installation of plumbing in the $750,000 State House Annex being erected on Smith and Davis streets in this city.

Sinton, Tex.—A. J. Monier & Co., 1446 North Flores street, San Antonio, have the plumbing contract on the $100,000 San Patricio County Court House here.

Culver City, Calif.—Working plans are being prepared for a $100,000 City Hall.

St. John, N. B., Can.—A contract for the installation of a new plumbing system in the Customs House has been awarded to W. E. Emerson & Sons. The sum involved is $11,000. W. E. Emerson & Sons are also busy on a contract for the installation of a heating system in a new warehouse on a steamship dock at Halifax, N. S., owned by the Canadian government.

Salt Lake City, Utah—The heating contract for the 145th field artillery armory has been awarded to H. B. Cromar.

Miami Beach, Fla.—Alexander Orr, Jr., Inc., 45 N. W. Third street, Miami, has the plumbing contract in the erection of the new $235,000 city hall here.

Milwaukee, Wis.—Bids are being taken for a community building to cost about $100,000 to be erected here. Backes & Uthus are the architects.

Manitowoc, Wis.—A. H. Dummer has been awarded the plumbing contract for the county jail here.

Miscellaneous

Jackson, Mich.—M. R. Hulliberger has been awarded the plumbing contract and the Lize Heating & Ventilating Co. of Auburn, Ind., has been awarded the heating and ventilating contract for a $300,000 gymnasium being erected here.

Barrington, R. I.—Additions to the residence of State Finance Commissioner Frederick S. Peck, costing several hundred thousand dollars, will be made from plans by George Frederic Hall of Providence, R. I. The general contract has been let to O. D. Purington & Co.

Burlingame, Calif.—H. R. Park has just been awarded the plumbing contract on three new dwellings to be erected in this city.

Gravel Drives, Mich.—Levine Brothers have been awarded the heating contract on 12 farm buildings to be erected here at a cost of $150,420.

Brownsville, Tex.—Plans are being prepared by R. W. Barnes, chief engineer of the Southern Pacific R. R., at Houston, for the construction of a station here, to cost around $100,000.

Institutions

Boston, Mass.—The city of Boston will erect a surgical building at the City hospital, costing $560,000. Plans are in the hands of the City of Boston Building department.

St. Peter, Minn.—The Maltby Plumbing & Heating Co., with a bid of $11,488, was the low bidder for making alterations to the bath rooms in the state hospital located here. C. H. Johnston, 715 Capital Bank building, St. Paul, is the architect, and the Pillsbury Engineering Co., 2344 Nicollet avenue, Minneapolis, are the mechanical engineers.

Beloit, Wis.—The Witte-Newton Co. received the plumbing contract for the municipal hospital under construction

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Hessler Roof Flanges can be installed on any job, by one man, in ten minutes. No lead, oakum, putty or blow torch are required.

A hammer does the work with a Hessler and once put on, it's there to stay.

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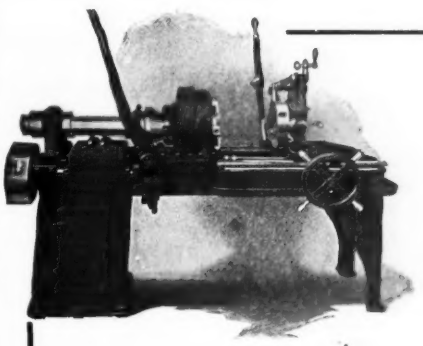
H. E. Hessler Company
Syracuse, New York



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Don't Be Content

With ordinary Roof Flashings

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Every Flashing Adjustable
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UNITEM

SUBMERGED WATER HEATER

Heats Water With Water

Makes separate water heater unnecessary.
Saves 50 to 70 of fuel bills.
Installed in either oil or coal fired boilers.
Operates in summer and winter with equal satisfaction.
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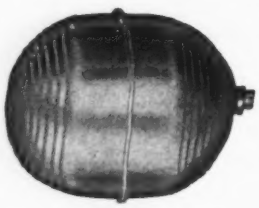

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REICHERT FLOAT & MFG. COMPANY
2238 Smead Avenue
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Float

Always the Same—Better

Gleockle's are going along, on the job all the time, helping the plumber by saving his time and making a business of being better. Try them once—they'll help you too.

Write for Booklet.

A. F. GLEOCKLE, Jr.
415 Bay Street
Rochester :: New York

here on the low bid of $19,983. The heating contract was awarded Osborn & Klingberg on the bid of $10,806.

Baltimore, Md.—The Bueckel & Co., plumbing and heating engineers, 24 Union avenue, Boston, Mass., have the plumbing and heating contract in the erection of the five-story addition to the Johns Hopkins hospital.

Lexington, Ky.—S. A. Reynolds, 116 Church street, has been awarded the $17,681 plumbing contract, and the Redmon Heating Co., 124 North Fourth street, Louisville, has the heating contract in the erection of the $160,000 addition to the Good Samaritan Methodist hospital, South Limestone street.

Stockton, Calif.—George McDougall, state architect, Forum building, Sacramento, will shortly commence preparation of plans for the $250,000 state hospital to be erected in this city.

Rochester, N. Y.—John B. Pike has the contract for the erection of the new Home for the Blind to be built at 439 Monroe avenue. The structure will be of concrete, 52x128 ft. Thompson, Holmes & Converse are the architects.

Buffalo, N. Y.—Work on the new Teachers' College in this city is expected to start this fall, following efforts being put forth by Mayor Schwaab. The city has received 93 acres of hospital property, in return for which it promises to erect a new Normal College. Colonel Howard Beck, city architect, will be directed to begin plans at once.

Moncton, N. B., Can.—Tenders have been called for the installation of the heating and plumbing systems in a new building being erected for the Sisters of the Sacred Heart, to be used as a private hospital. Construction was begun recently.

Vancouver, Wash.—The Wahl Plumbing & Heating Co. received the heating contract on the new administration building for the School for the Deaf, at a figure of $7,828. The plumbing award went to Braley & Cusick at $8,700. Work on the heating will be started at once, and must be finished by December 1.

Aberdeen, S. D.—P. J. Leonard, 507 Exchange Bank building, St. Paul, Minn., has the plumbing and heating contract on an addition to St. Luke's hospital here.

Helena, Mont.—L. W. Christie has been awarded the plumbing and heating contract on the I. O. O. F. home here.

St. Louis, Mo.—The Central Institute of the Deaf, of which Dr. Max Goldstein, 818 South Kingshighway, is director, will take bids about August 15 on a $350,000 building.

Ladysmith, Wis.—Bids are being taken by Charles A. Hausler, architect, for the hospital and convent to be erected here.

Chippewa Falls, Wis.—Bids are being taken by Architects Foeller & Schober, Green Bay, for a $100,000 hospital addition to be erected here.

Okauchee, Wis.—Bids are being taken for a hospital to be erected by Architects Parkinson & Dockendroff, La-Crosse.

Houston, Tex.—Drs. E. M. Bailey and L. M. Farquahrson are having plans prepared for the construction of a sanitarium, two stories, of brick, stone and concrete, to cost $200,000.

Houston, Tex.—W. A. Dowdy, city architect, is drawing plans for the construction of a nurses' home for the City hospital.

Howell, Miss.—Bids will be invited soon for eight cottages, two distributed cottages, two infirmaries, two epileptic buildings, a power house and a tubercular building for the State Insane hospital here. Plans are being prepared by N. W. Overstreet, Jackson, Miss.

Alexandria, La.—J. W. Smith, Monroe, La., is preparing plans for the new building for the Industrial Home for Girls to be erected here.

Bridgeport, Conn.—Dr. W. H. Hersey, superintendent of the Bridgeport hospital, has announced that plans have been completed for a three-story, brick and steel hospital addition, 42x200 ft., to cost around $200,000. Edward B. Caldwell, Jr., 886 Main street, is the architect.

Framingham, Mass.—Bids are being received for the construction of an addition to the hospital for the Framingham Hospital Association, plans for which have been drawn by the Boston architects, Coolidge, Shepley, Bulfinch & Abbott. The heating and plumbing contracts will be awarded separately.

Burlington, Iowa—J. W. Darragh, 201 Fourteenth avenue East, Cedar Rapids, with a bid of $32,000, has been awarded the plumbing and heating contract in the six-story addition to the Mercy hospital to be built at a cost of $350,000.

Keokuk, Iowa—The W. C. Graham Protestant Hospital Association is having plans made for a three-story hospital to be built at Fourth avenue North and Fifteenth street, to cost $400,000. Martin J. Geise, Y. M. C. A. building, is the architect.

New Ulm, Minn.—The Vercoe Plumbing & Heating Co. has been awarded the plumbing contract in the three-story, 44x68 ft. addition to the Union hospital. Charles Emmerich has been awarded the contract for steam heating installation. C. A. Heers, 425 South State street, is the architect.

Rochester, N. Y.—A new building for the Rochester State hospital's lakeside convalescent colony, in addition to the five new buildings to be built on the Elmwood avenue grounds announced recently, will be erected here. The new building will probably be of lake stone and will accommodate 25 patients. $90,000 is available.

Manufacturers' and wholesalers' representatives at the North Carolina state association's recent convention

Lakeville, Mass.—Bids have been closed and the contract will be awarded shortly for the new surgical building to be erected at the Lakeville State Sanitarium, the new cancer hospital opened by the State of Massachusetts, Department of Public Health, on June 21. The building is to be of stucco and wood construction, one and one-half stories, 68x43 ft.

Northampton, Mass.—Bids have been closed for the nurses' home which the Department of Mental Diseases of the Commonwealth of Massachusetts will build at the state hospital here. The cost of the structure will be in the neighborhood of $126,000. Architect Gordon Robb of Boston drew the plans. The heating and ventilating engineer is the A. B. Franklin Co. of Haverhill street, Boston, Mass.

It's the little things that count. Good fittings make good work. See that the H is on them. Because they are heavier they will last longer and they cost no more.

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Makers of High-Grade

Plumbers Brass Goods

Main Office and Works:

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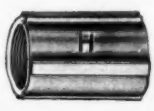
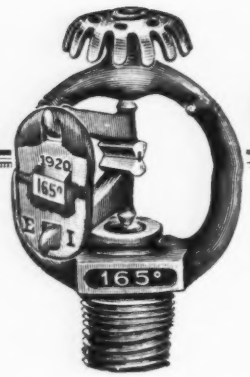


C.S.B. Heads



C. S. B. Sprinklers are made in four different temperatures:

ORDINARY COLOR	BRONZE	165°
INTERMEDIATE "	WHITE	212°
HARD "	BLUE	280°
EXTRA HARD "	RED	360°

Every head has the model, year of manufacture and the degree of fusing, cast on the frame.

C.S.B. SPRINKLER COMPANY
54 BATTERYMARCH ST., BOSTON, MASS.

No More Rusty Water

Where the Cle-Bar Water Heater is installed, a steady flow of *clean* hot water is assured.

The water passing through Cle-Bar Heaters is purified by a special Cle-Bar process which is a part of every one of our heaters.

Write for full details of the Cle-Bar line—a water heater for every need.

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CLE-BAR

Schools

West Roxbury, Mass.—The City of Boston Schoolhouse Department, City Hall Annex, Boston, has commissioned Newhall & Bevins, Inc., 9 Park Place, Boston, to prepare plans for an elementary school in the Longfellow District, to cost $200,000.

Price, Utah—The plumbing and heating contracts for the new addition to the school building at Spring Glen have been let to E. K. Ferguson of Spanish Fork, Utah.

Watertown, Wis.—A $100,000 addition to the Junior high school is being planned by the board of education. Dr. F. F. Schueter is president of the board.

Pasadena, Calif.—California Institute of Technology will start construction of a building on August 1 to take care of their English and modern language departments, at a cost of $250,000. William C. Crowell will be the contractor.

New Orleans, La.—The American Plumbing & Heating *Co., 829 Baronne street, was awarded the plumbing and* heating contract on the Samuel J. Peters Boys' Commercial high school.

Corinth, Miss.—Plans and specifications were nearing completion and were expected to be ready about July 22 for the proposed $150,000 school building here. J. Platt *Roberts, Mobile, Ala., is architect for the project.*

Redlands, Calif.—Plans have been completed for a junior high school building costing $125,000, to contain 20 classrooms. Edwin Bergstrom, Citizens' National Bank building, Los Angeles, is the architect.

Natchez, Miss.—Joseph Serio was awarded the plumbing and heating contract on the new Natchez high school building, on his bid of $18,638.15.

Berger, Tex.—The Berger Independent School District has voted an issue of $200,000 for the construction of three grade schools. The buildings will all be of brick and concrete. No architect has yet been selected.

Dayton, Tex.—The board of education is having sketches made for a two-story high school to include nine classrooms and an auditorium and to cost $125,000.

Pharr, Tex.—Plans are being made by Harvey P. Smith, architect, National Bank of Commerce building, San Antonio, for an eight-room Mexican grammar school for the Pharr-San Juan Independent School District, to cost $50,000. Preliminary plans have also been made for additions to the high schools at Pharr and San Juan to cost $25,000 each.

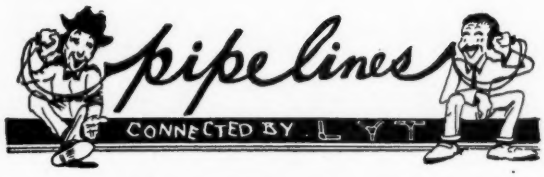
San Antonio, Tex.—Plans are being drawn by Leo J. Dielmann, architect, 306 East Commerce street, for a Science building for St. Mary's College. The building will be of two stories and will have twelve rooms. Plans are also being made for a gymnasium, two stories, 120x180 ft.

Frankfort, N. Y.—Edmund C. Richards has been awarded the contract for building the new combination high school building, on his bid of $118,800.

Indianapolis, Ind.—Butler University plans to build a stadium at Fairview Park to cost $200,000. Charles Ammerman, Continental Bank building, is mechanical engineer.

Storrs, Conn.—The State of Connecticut has appointed Delbert K. Perry, 17 Court street, New Britain, to draw the plans for a class-room building at the Connecticut Agriculture College, Storrs, to cost $350,000. A three-story brick and steel building and basement is specified.

De Kalb, Ill.—Kale & McKay, Inc., 226 Seventeenth street, Rock Island, Ill., were recently awarded the heating contract for the Northern State Teachers' College with a bid of $11,990.



A LITTLE ONE ON THE DOCTORS

An Irishman, just coming out of ether in the ward after an operation, exclaimed: "Thank goodness, that's over."

"Don't be too sure," said the man in the next bed. "They left a sponge in me and had to cut me open again."

The patient on the other side said, "Say—they had to open me up, too, to find one of their instruments."

Just then the surgeon who had operated on the Irishman stuck his head in the door and called to the two nurses who were in the room:

"Has anybody seen my umbrella?"

Pat fainted.

P. J. T., Jersey City, N. J.

FOR THE DEFENSE

The jury had found the prisoner guilty of murder in the first degree. *It didn't seem to bother him very much,* although there was something on his mind.

"Have you anything to say?" asked the judge.

"Yeh; I have a mout'ful t' say," replied the prisoner, rising in his place. "I ain't said I didn't bump de guy off. I ain't bought up no expert witnesses to prove dat I'm nuts. I ain't done nothin' to keep de trial goin' an' make it cost de state a lot o' dough. But I t'ink dere oughta be a law to make de *papers spell a guy's name right. I done it—an' I want credit."*

T. N. O'F., Los Angeles, Cal.

IF

She can take a million dollars,
She can wear a man's-style collars,
She can be very dumb or very witty;
She can marry fifteen helpmates,
And dispose of them with sash weights—
In short, do almost anything—if only she is pretty.

D. N. D., Omaha, Neb.

Don't be fooled by the fellow who laughs when you tell a joke. He's probably laughing at the one he's going to tell next.

THE WEATHER

Try to talk of something serious,
Someone says: "Gee! Ain't it hot!"
Try to be all pep, industrious—
Someone croaks: "Gee! Ain't it hot!"
Try to be poetic,
Busy, energetic—
It's vain, when all the world together
Thinks of nothing but the weather—
Someone groans: "Gee! Ain't it hot!"

T. N. O'F., Los Angeles, Cal.

"SY" SEZ

After some people buy an auto, about the only jack they have left is under the back seat.

It is hard to laugh at your own expense—especially on the first of every month.

It was the week before little Willie's birthday and he was on his knees at his bedside petitioning Divine Providence for presents, in a very loud voice.

"Please send me," he shouted, "a bicycle, a tool chest, a——"

"What are you praying so loud for?" his younger brother interrupted. "God ain't deaf."

"I know that," said Willie, winking toward the next room. "But grandma is."

"SY" MARTIN, Owensboro, Ky.

There's only one thing the cigarette advertisers have overlooked. They ought to have a wife saying how glad she is to sweep up What'sthis cigarette ashes.

L Y T.

BULLARD
Roof Flanges
for Busy Men

When you are busy and jobs must be done in a hurry but well, equip yourself with *Bullard Roof Flashings*—they'll save you time and money. There are no joints to calk or difficult fittings to make.

Order from your Jobber.

THE BULLARD SPECIALTY CO., Tiffin, Ohio

NIEDECKEN SHOWERS
PATENTED
Give Satisfactory Service in the Largest Shower Installations in the *World.*
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MANUFACTURERS SINCE 1855.
MILWAUKEE, U. S. A.

The Baltimore Quality Line
PLUMBERS' CAST BRASS GOODS
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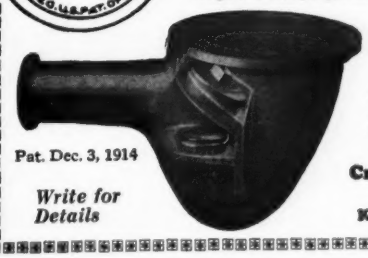
BALTIMORE, MD.

INSURANCE
AGAINST FLOODED BASEMENTS
TRADE MARK SIGNET REG. U.S. PAT. OFF.
Where the Signet Drain is installed there can be no back water.
A perfectly reliable trap that automatically keeps out sewage, gas and germs.



Always works. Nothing to get out of order. Brass working parts submerged.
The Signet is clean, sanitary, simple, durable and efficient.
Pat. Dec. 3, 1914
Write for Details
Crampton-Farley Brass Co.
Kansas City, Mo.

Porcelain Wall Soap Dish
No. 1001
4½" x 4" Extends 4¼" from wall

MAID-EN-WHITE

The Vogue in Fixtures!

There are style demands in bathroom fixtures just as definite as in any other modern home equipment.

The present-day demand is for a set of fixtures with class—good design; fixtures that are pure white and stay white; fixtures that can be easily attached to and set close to the wall; but they must not cost too much.

The Maid-En-White Porcelain line fits that demand like a fish in water. It is made of a glass hard, pure white, genuine porcelain on a special iron base that provides the class and utility without undue cost. When one piece is sold it sells the others.

The margin of mark-up, with the easy repeat sales, is not the least interesting feature for you.

Write now for our new catalog of all our lines and prices.

The Autoyre Company
(AUTO-WIRE)
OAKVILLE CONN.

Bath a Day Movement

C. V. SWANN, Huntington, W. Va., president of the Master Plumbers' Association of West Virginia, has hit upon something in the distribution of "The Story of the Bath" which should have far-reaching effects.

Summer courses for teachers are very general. At Marshall College, in Huntington, Mr. Swann is going to distribute one hundred and fifty copies of "The Story of the Bath" to those who are attending the classes.

When these teachers go back to their respective schools, all over the state, they're going to take with them the message that is in "The Story." They're going to take with them a brand new conception of the work which the master plumber does in his community.

There are hundreds of these summer schools in progress all over the country. Attending them are thousands of school teachers. State associations would find it mighty valuable to give to these teachers, who come from all parts of the state, this booklet. They will go back to their schools and in looking for class projects will undoubtedly see the value of the Bath a Day Movement and the use of "The Story of the Bath."

If there's a summer college for teachers in your city, get in touch with the authorities and offer to distribute the necessary copies. Call the matter to the attention of your state officers.

Epigrams—For Your Use

What we really need is more tractors and less detractors.

* * *

"Paint Up" Week is not a warning to girls.

* * *

A wheezy automobile hasn't any sentiment like a wheezy old horse.

* * *

Troubles have no interest at all except to their victims.

* * *

Fish must blush during the bathing season.

* * *

Taking the baby along doesn't always refer to an infant.

NATIONAL T. E. B. LECTURERS' ITINERARIES FOR AUGUST

The National Trade Extension Bureau has just announced the following itineraries for its lecturers for the month of August:

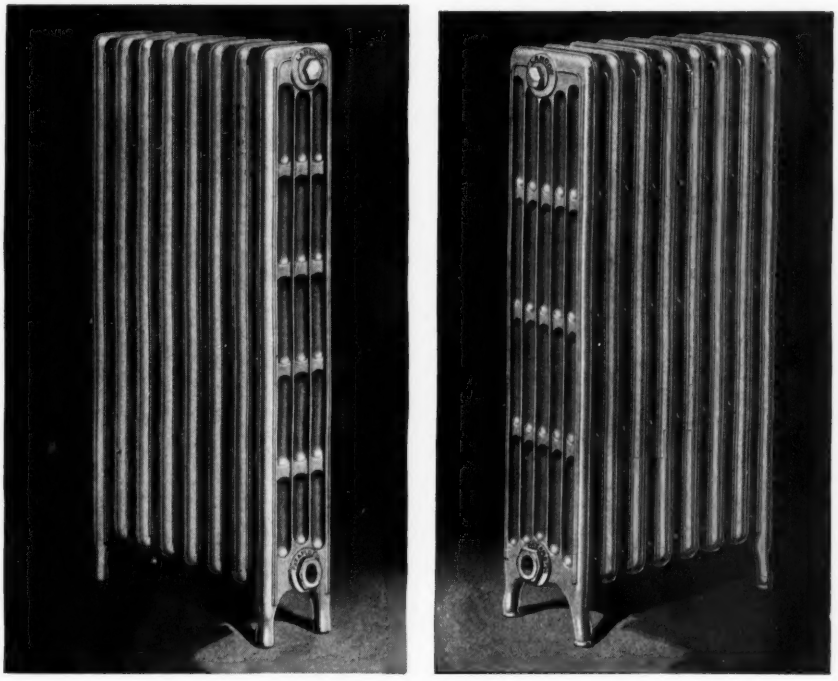
W. G. Archer: August 1, Manitowoc, Wis.; 2, Milwaukee, Wis.; 3, Beloit, Wis.; 4, Madison, Wis.; 6, Wisconsin Rapids, Wis.; 8, Marshfield, Wis.; 10, Eau Claire, Wis.; 11, LaCrosse, Wis.; 15, Dubuque, Iowa; 16, Waterloo, Iowa; 17, Marshalltown, Iowa; 22, Ft. Dodge, Iowa; 24, Des Moines, Iowa; 26, Omaha, Nebr.; 30, Seward, Nebr.; 31, Crete, Nebr.

B. Jos. O'Donnell will visit Zones 5, 4 and 3, in New York State, during the month of August.

Hinsdale, N. H.—William H. McLean, 88 Tremont street, Boston, Mass., has been commissioned to prepare plans for the elementary school to be erected by this town.

Santa Barbara, Calif.—Working plans are being prepared by State Architect George B. McDougall, Forum building, Sacramento, covering work on the $175,000 Home Economics and Science building for the State Teachers' College. This is the first unit of a $350,000 building program for this institution.

RADIATORS BY LANDON



The Landon Four and Six Tube

The design of Landon Radiators gives greater beauty and better heating. The heating efficiency is marked for the Landon is built along scientific lines and practical heating application.

They are built with right and left thread nipples and have ample passages inside. They conserve space and fuel and are entirely smooth.

The Landon Invisible Shield increases the efficiency of Landon Radiators. It throws the warmed air into the room away from the walls and hangings. It is supplied at slight additional cost which includes priming.

Landon Radiators are shipped with or without shields in all sizes.

Write us at once for full information and prices.

THE LANDON RADIATOR CO. INC.

NORTH TONAWANDA N.Y.

READING PIPE

GENUINE WROUGHT IRON

This estimate is based on the use of Steel Pipe. However, we believe because of its two to three times longer life, your interests would be much better served by an installation of
at an additional cost of only
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THOS. SMITH & BRO.,
MASTER PLUMBERS
137 MAPLE AVE., CAMDEN, N.J.
ESTIMATE
Your Estimate for Steel Pipe

Don't put the "Take it or leave it" attitude in your estimates

NOBODY likes to have estimates submitted to them with a "take it or leave it" attitude—but that is exactly what is done when only one estimate is submitted. In spite of the fact that competition is keenest when bids are submitted, it is the practice of numerous shops to submit only one estimate.

If you were the *last* contractor to talk to any prospect your chances for landing the job would be greatly increased. The use of "alternate bid" stickers gives you the opportunity to talk price and high quality of your work in your estimates. Numerous plumbers are attaching one of these stickers to every estimate sent out.

Here is a way to make money without one cent extra cost—a way to get prospects to ask you to talk your bid after your competitors are all through. Your "alternate bid" sticker will keep you in line with competitors on ordinary steel pipe price, and your extra profits will come in installation of Reading Genuine Wrought Iron Pipe. The ease in cutting and threading, the minimum spoilage of pipe, with the consequent saving of time and labor, all add to your profits.

A supply of these "alternate bids" will be sent you on request from any branch office so that your estimate will not be a "take it or leave it" estimate.

Reading Nipples of Genuine Wrought Iron are positively identified by a band of knurling.

To

READING IRON
COMPANY
Reading, Pa.

Please send me a supply of Two-Bid Stickers for use in submitting estimates.

*Name*_____

*Address*_____

*City and State*_____

READING IRON COMPANY
READING, PA.
World's Largest Manufacturers of Genuine Wrought Iron Pipe

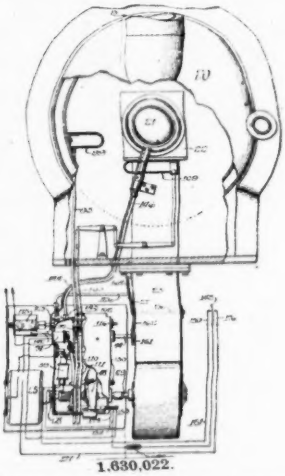
Baltimore	Cincinnati	Philadelphia
Boston	Detroit	Pittsburgh
Buffalo	Houston	Cleveland
Chicago	Los Angeles	St. Louis
Minneapolis	New York	Shreveport
Tulsa	Seattle	

All Reading Genuine Wrought Iron Pipe carries a spiral band of knurling—an identification visible even through paint or galvanizing.

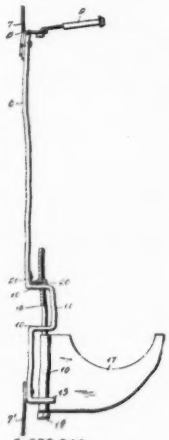
PATENTS

Heating Department

1,630,022. Automatic Control for Oil Burners. Frank A. Lundquist, Chicago, Ill., assignor to New Process Burner Corporation, Chicago, Ill., a corporation of Illinois. In a furnace control mechanism, a motor, a thermostat and connections for starting the motor into operation, devices moved by the motor for conveying oil to a point of combustion in the furnace, and means controlled by the thermostat for shutting off the supply when room temperature rises above a predetermined point such shutting off being independent of the operation of the motor.



1,630,022.

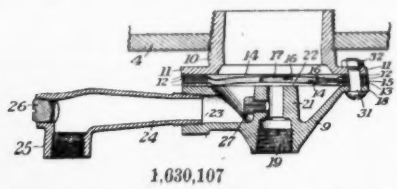


1,630,919.

1,630,919. Hanger for Wall Radiators. William F. Bach, Cleveland Heights, Ohio. A wall radiator hanger comprising a body attachable to a wall and having a substantially reverse S-shaped lower portion, said portion having vertically aligned bolt holes, the lower arm of said portion projecting forwardly and having a hole with a slot opening through the adjacent front edge of said arm, a shoe having a barrel vertically slidable through the lower hole, a bolt passing through the holes and barrel, means for vertically adjusting the shoe, and a forwardly extending blade carried by the barrel and projecting through said slot.

* * *

1,630,107. Gas Steam Radiator. George W. Blackmore, Edgewood, Pa., assignor to Automatic Gas Steam Radiator Company, Pittsburgh, Pa. A pressure valve for radiators and the like, including a pair of flexible metal



1,630,107

disks, a separating washer between the disks, a flexible arm on the washer, a button on the arm of a thickness substantially equal to the spacing between the disks, and a supporting structure for the disks.

* * *

1,630,265. Oil-Feed Control for Oil Burners. Arthur P. Holden, Philip Morgan and Samuel Rolfe Williams, Toronto, Ontario, Canada. In an oil feed control for oil burners, the combination with an oil supply and a pump

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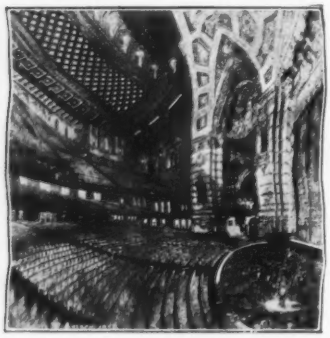

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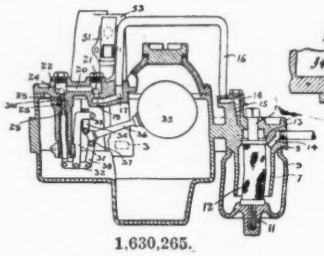
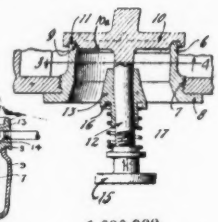
and means for regulating the flow of oil from the pump to the burner, of a reservoir adapted to receive the excess discharge from the pump, an oil passage connected with the main supply and leading to the intake of the oil pump, a free check valve in said passage adapted to close the inflow of oil to the pump, a passage connected with the passage to the pump and leading into the reservoir, a valve separate from said check valve adapted to close the passage from the reservoir to the pump and concurrently open the check valve and adapted to permit the closing of the check valve upon being opened, and float controlled means for operating the latter valve.



1,630,265.

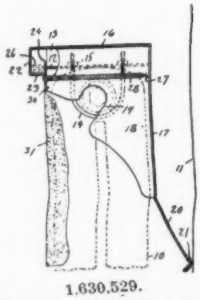


1,630,362.

1,630,362. Valve. William S. Sutton, Rockford, Ill., assignor to American Radiator Co., Chicago. A valve of the character described, comprising a casing having an internal annular wall terminating at the outlet end in a valve seat; a valve disk having an enlarged central portion at its inner side and an annular groove adjacent its periphery; said groove having a relatively wide inwardly inclined wall constituting the periphery of said enlarged central portion, a narrow outwardly-inclined outer wall portion and a horizontal intermediate wall portion, an intermediate portion of said inwardly-inclined wall adapted to engage said valve seat when the valve is closed; said annular groove serving to receive the adjacent end of said annular casing, the outer and intermediate wall portions of said groove lying about and in normally spaced relation to the adjacent outer portion of said annular casing to provide a passage therebetween, said inwardly-inclined wall projecting within said casing when the valve is seated to provide a wedge-like annular space between said enlarged central portion of the valve disk and the adjacent portion of the internal annular wall of the casing below the valve seat whereby, when said valve is actuated, to cause the fluid to instantly pass through said passage and react upon the walls thereof and upon the valve seat to unseat and maintain said valve disk unseated, substantially as specified.

* * *

1,630,529. Radiator Cover. Karl Drlica, Portland, Ore. A radiator cover having a pair of horizontal bracket members each of which consists of a channel member adapted to be placed horizontally over the sections of a radiator



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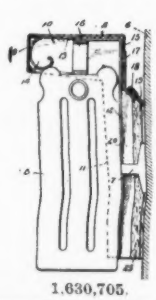


1,630,705.

with the open side of the channel uppermost, each bracket having a U-bolt clamp passing around the under side of the section connection under its respective bracket and fastening to the under side of said channel in a manner

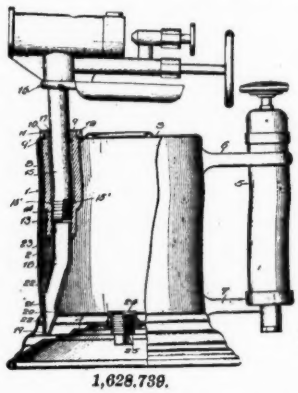
to hold its bracket in a permanent position; a removable shelf resting on said brackets and having downturned front, side and rear edges, the front edge having an inturned lip whose rear edge touches the front of the brackets and the rear edge of said shelf touching the back of said brackets, said rear edge extending downwardly and backwardly to form a spring contact with the well behind the radiator, said shelf being capable of removal by a lifting action without the removal of any fastenings.

* * *

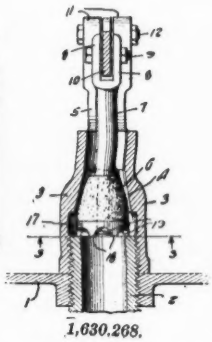
1,630,705. Radiator Shield. David H. King, Seattle, Wash., assignor to Pacific Radiator Shield Co., Seattle, Wash. The combination with a radiator, of a shield comprising a top portion, a dust trap member attached to and disposed below said top portion, side members having flanges deflected at right angles therefrom forming an open space therebetween at the rear of said shield, side pieces secured to said flanges on said side members and having flanges extending inwardly therefrom, a back wall secured to said top portion, a back piece secured to said back wall and extending the full width of said shield, and flexible strips carried by said back piece and said last flanges to form a closure for the top and side portions.

Plumbing Department

1,628,739. Plumber's Blowtorch. William F. Pagel, Sycamore, Ill. In a plumber's blow torch a sheet metal reservoir, a burner arranged above the reservoir, a support tube having its upper end secured in the top wall of the



1,628,739.



1,630,268.

reservoir and projecting down into the reservoir, a fuel feed tube having its lower end mounted in the lower end of the support tube and the feed tube extending freely up through the support tube to the burner.

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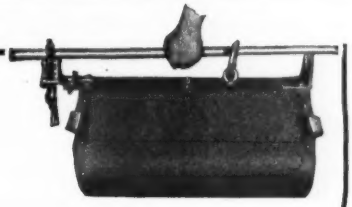

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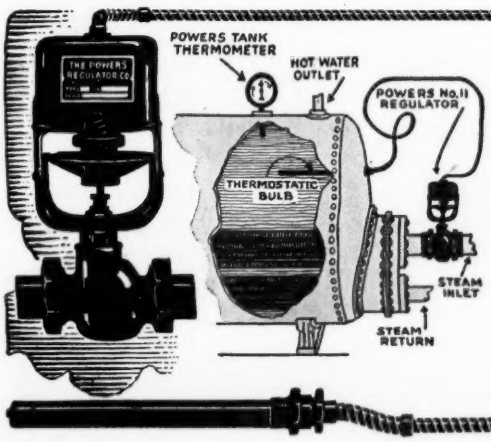

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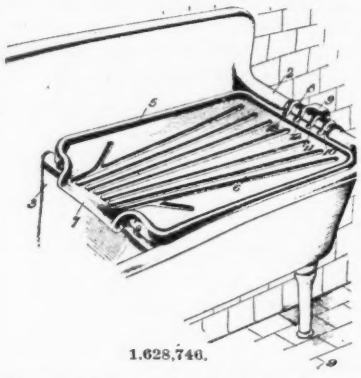
1,630,268. Automatic Valve for Water Tanks. Otto Linstadt, Madison, Nebr. In an automatic valve for water tanks, the combination of a threaded valve casing, an inflow water pipe on which said valve casing is threaded, an upstanding and offset arm integral with the valve casing, a rod having one end pivotally affixed to said arm, a float connected with the free end of the arm, a valve stem pivotally connected with an intermediate portion of the rod, a resilient valve mounted on the valve stem and adapted to seat in the valve seat of the valve casing, and a head affixed to the lower end of the valve stem and bearing against the valve, said head having spaced lugs adapted to rest on the upper end of the inflow water pipe when the valve is unseated.

* * *

1,628,746. Combination Drain Board and Cover. John W. Russel, Columbia, Pa., assignor of one-half to Marietta Hollow Ware and Enameling Company, Marietta, Pa. A combination drain board and cover for use with a combination laundry tray and sink comprising a one piece metal body having one end adapted to engage a partition of the combination laundry tray and sink and having an upwardly and outwardly curved extension defining a hanger at its opposite end designed to snugly engage the rounded outside wall of the combination laundry tray and sink for the major portion of the extent of the hanger, the central portion of the hanger being struck-up providing a pocket between the hanger and the rounded upper edge of the outside wall of the combination laundry tray and sink permitting the fingers to be introduced under the hanger, the upwardly struck central section of the hanger constituting a hand grip, facilitating application and removal of the combination, cover and drain board as described.

1,629,465. Drain Valve. Antistene Abbamonte, Cheyenne, Wyo. In a valve construction, a body portion, a cylinder at one end of the body portion, a casing at the other end of the body portion, said cylinder having a shoulder, and said casing having spaced valve seats, a piston in the cylinder adapted to be normally held against

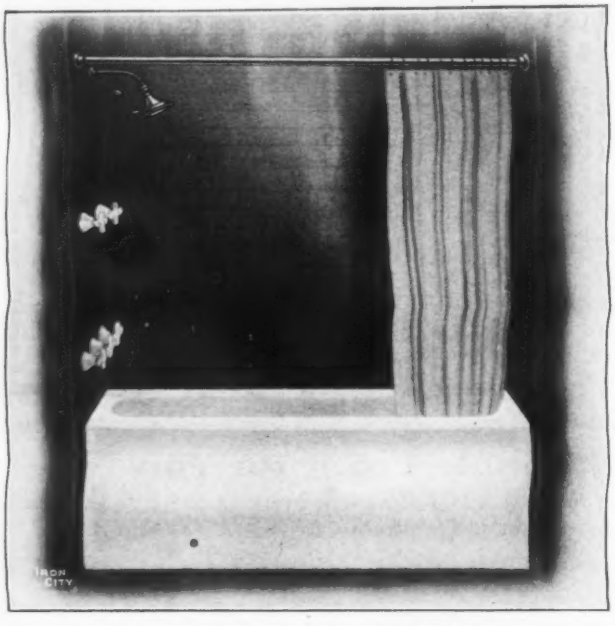


1,628,746. 1,629,465.

said shoulder, a valve in the casing and including a valve rod, said valve adapted to be unseated by fluid pressure in the casing, spring pressed pins co-operating with the valve rod to hold the valve on one of its seats, and means for adjusting the tension of the springs to regulate the action of the pins.

* * *

1,629,457. Combined Floor-Drain and Back-Pressure Water Trap. William V. Bulman, Philadelphia, Pa. A combined drain and trap, comprising a body portion having an open upper end; a trap extending from the lower end of said body, the inlet to said trap being offset from



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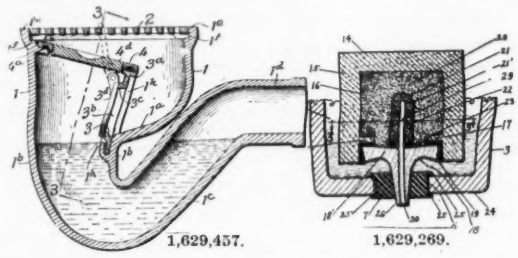
the vertical axis of the body; a flange in said body over the trap inlet; a transversely disposed partition in the said body connecting with the ends of the flange, the



1,629,457. 1,629,269.

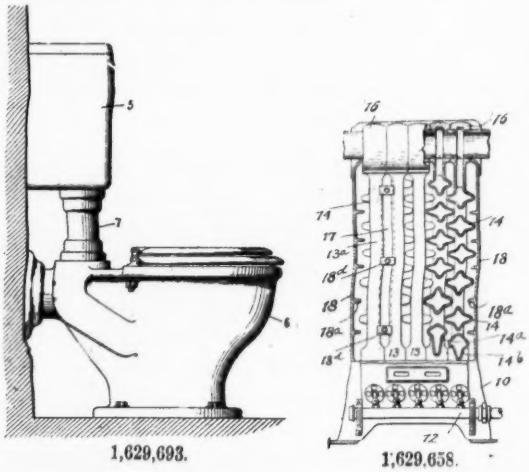
upper edge of the partition lying in the plane of the face of said flange; said partition having a slot, and the edges of said slot being grooved; a valve plate in said slot having its edges packed into the grooves, the upper edge of the valve plate forming a continuation of the upper edge of the partition; and a cover removably seated on the flange, partition, and plate.

* * *

1,629,269. Water Filter. Virgil B. Hagg, West Hollywood, Calif. A filter comprising a water receptacle, a filter element within said receptacle in position to be entirely surrounded by the water therein, said filter element comprising an outer wall of porous stone and having an internal chamber separated from said receptacle by said outer wall, a body of granular purifying material in said chamber, an inverted thimble of porous mineral material in the central portion of said chamber and having a central passage opening downwardly to permit exit of water therethrough, the lower portion of said thimble being more finely porous than the upper portion, and means below said filter element for receiving the water passing therethrough, for the purpose and essentially as described.

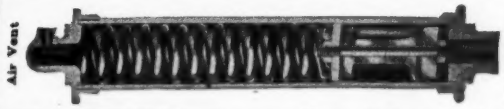
* * *

1,629,693. Housing for Pipe Connections. Andrew Foltz, Lambertville, N. J. A housing for flush pipe connections comprising a hollow member open from end to end along one side wall thereof to detachably connect said housing to the pipe whereby the housing may be pressed



1,629,693. 1,629,658.

transversely into housing relation to the pipe, and a U-shaped spring clamping member mounted in the housing and having its arms arranged to extend in flanking and clamping relation to the pipe to hold the housing in place and center it on the pipe.



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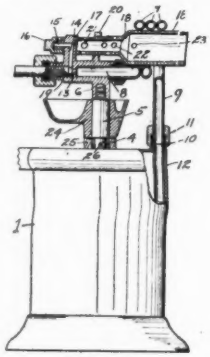
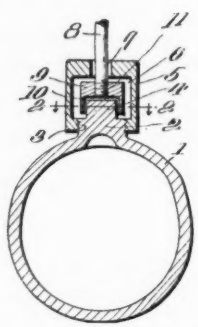
1,629,658. Water Heater. Otto Fox, Lakewood, Ohio, assignor to The Bryant Heater Manufacturing Company, Cleveland, Ohio. A water heater comprising a series of water circulating elements arranged side by side and each comprising upright water conveying portions and transverse ducts extending between the same, burners arranged beneath the elements, the ducts of adjacent elements being staggered, and the bottom portions of the lowermost ducts of said elements being at substantially the same level.

* * *

1,629,909. Blowtorch. Herbert L. Fish, Springfield, Ohio, assignor to Harry C. Downey, Springfield, Ohio. In a blow torch, a tank, a generator and a burner tube, means for supporting same by and immediately above the tank and in close proximity thereto, a fuel tube independent of said supporting means coiled about said burner tube immediately above said tank, one end of said fuel tube being connected with said generator and the other end of said fuel tube extended immediately downward from said coil and projecting into said tank in proximity to the lower portion of the interior thereof, said burner tube being provided with flame jet openings in proximity to said coil to heat said coil and cause the heat to be conducted by said tube to the fuel in said tank, said fuel tube forming the sole means of conducting heat to said fuel.



1,629,909.

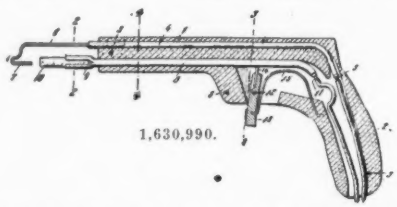


1,629,571.

1,629,571. Flush-Valve Float. Edward L. Delany, Brooklyn, N. Y. A flush valve float comprising a body portion having a nipple at its upper end, and externally threaded, a cap screwed on the nipple and having an opening in its upper end, a member within the cap and held against rotation, and a lifting rod passing through the opening in the cap and detachably connected to the member within the cap.

* * *

1,630,990. Soldering Iron. Harley A. Wagg, Wapello, Iowa. A soldering iron comprising a body of insulating material, longitudinally arranged copper tubes therein,



1,630,990.

a wire electrode having one end frictionally received in one of the tubes and having a hooked end in a line with the axial center of the second tube, said last mentioned tube having a clamp on the outer end thereof for the reception of a carbon stick, electric conductors connected with both of the tubes and means for imparting longitudinal movement to the carbon stick carrying tube.

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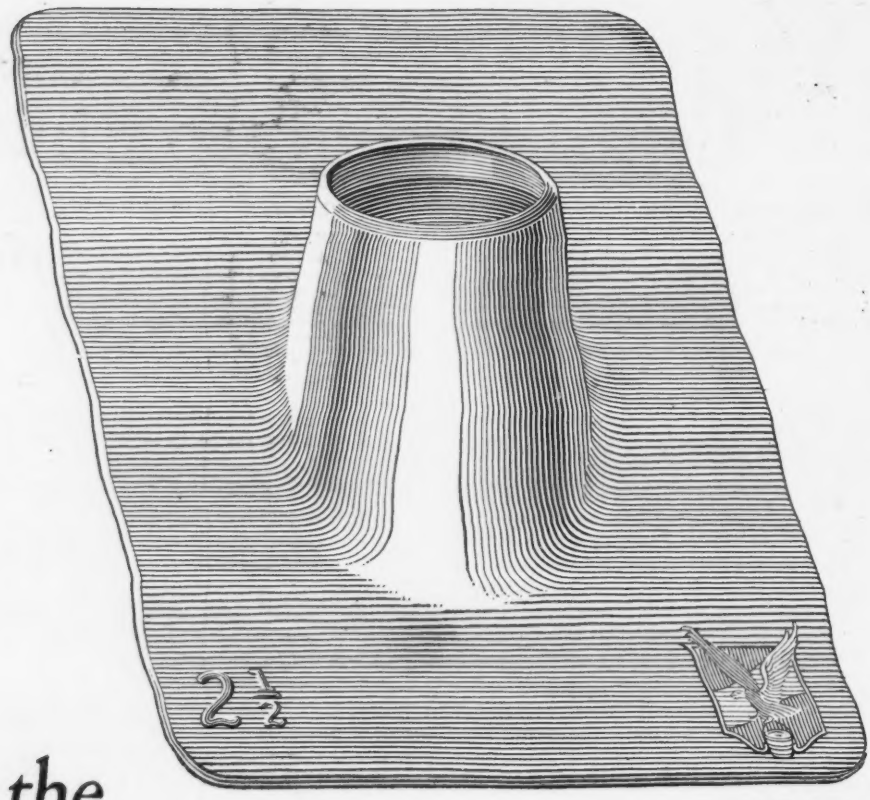

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